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American Railroad Journal.

Saturday, November 15, 1851.

Having been applied to for some copies of the following article, published in our paper last year, which we were unable to supply, we concluded to re-publish the article, as the views there expressed have, we believe, been fully confirmed by the present state of our foreign trade:

Balance of Trade.

Influence of the Exportation of Specie on Production and National Wealth.

The idea, which was regarded as a fundamental principle by the early school of political economists, that the measure of a nation's wealth was the am't of precious metals it possessed, and that trade was favorable or unfavorable just in proportion as it increased or diminished this amount, has been long since exploded, and is now referred to only as proof of the crude notions which once prevailed upon this subject, and excites surprise that such an absurdity could so long have exerted a controlling influence over the public mind.

This, though a very absurd idea, was a very natural mistake for people to fall into. In the early discussion of any subject, we are apt to mistake phenomena for causes, and the apparent for the real. It was in this way that gold and silver came to be regarded as the only articles to which the

term *wealth* could be applied. In all times and among all people have the precious metals been objects of more universal desire than any other articles of property. As a general rule, men are always found willing to part with whatever they can spare for gold and silver, from the value which they possess in their eyes, either for ornament or use. The possessor of them was always certain of being able to supply any of his wants, and obtain any other article of property in exchange for these.

This quality of exchangeability possessed by gold and silver to a much greater extent than any other values, naturally led people to the idea that the value of gold and silver was different in kind from all others. This mistake was further encouraged by the fact that all contracts were made payable in them, and that the possession of them was the end and object of trade and commerce of every kind.

Experience has long since exploded all such notions as these. Whatever can support labor and become the basis of production—whatever can administer to our wants and luxuries—is, in modern ideas, *wealth*; and the nation which is the best off in these respects, is justly regarded the richest.—Money is neither food nor clothing, and the only use of it is to obtain something which we can eat, drink or wear—something that adds to comfort; and the person who has purchased such articles, and exchanged for them his gold and silver, is just as rich after the exchange as he was before it took place.

Notwithstanding all this, we still find it to be the fact in the commercial world, that the nation which possesses most of the precious metals, wields, by virtue of them a very powerful influence, beneficial to itself, and prejudicial to the interests of all other members of the commercial confederacy.—We find in the United States, that the moment we begin to ship gold and silver to England, we feel the evil effects of it in commercial embarrassments. Money becomes scarce, just in proportion to the extent of the shipment; the value of all kinds of merchandise and property falls, and if the exportation is continued to a great extent, as in 1836-7, a commercial crisis and general insolvency is the result. The depreciation of property exceeds in value many times the amount of the specie shipped. If, on the other hand, an equal value in produce be exported, and its return received in gold and sil-

ver, the consequence would be an universal appreciation of prices, and general commercial prosperity. Now, if gold and silver, as a part of national wealth, are not distinguishable from wheat or cotton, in any of their characteristics, as property, why should the exportation of it be attended with such different results? We will endeavor to explain the apparent anomaly.

As we stated in the outset, gold and silver are objects of universal desire, and, for this reason, enable the possessor to obtain whatever he may wish by their exchange. This characteristic which they have over all other kinds of property, naturally leads every person to desire to possess as much as possible; or, in other words, to convert into them all surplus of other kinds of property. All contracts, for the same reason, were made payable in them, and thus the value of every article of merchandise came to be measured by the amount of gold and silver it would command.

This is the leading cause which led to the adoption of the precious metals as a medium of exchange. It is based, not upon the caprice, nor upon the conventional agreements of mankind, but upon a law of our nature. Gold and silver possess other characteristics which peculiarly fit them for this purpose—such as the amount and regularity of supply, and the capacity they possess for extreme divisibility without impairing their value; but these are subordinate, and not the leading reasons for their adoption as money.

But though gold and silver are valuable in themselves, and make up a part of the aggregate of national wealth, they are, in one point of view, so much dead capital when employed as money. They are neither food for, nor are they instruments in the hands of labor. In themselves they do not aid in the office of re-production. They are useful only as agents to facilitate the exchange of articles of use or consumption; and could this exchange be effected without this agency, the amount now used as money might be withdrawn from its present office, and be made the basis of further production. This fact has led to the dispensing with as large an amount as possible from their employment as money, so that we find, that though all contracts are stipulated to be paid in gold and silver, not one in ten thousand are discharged in them. Nearly the whole machinery of commerce is carried on without their actual intervention, by the use of a credit of which they form the basis, while they are

seldom removed from the vaults where they are placed for safe keeping.

Were every contract in life necessarily paid in gold and silver, the result would be two-fold: the value of them would rise to an exorbitant degree, and business transactions would be curtailed to an equal extent. It would increase the cost of all kinds of merchandise, and diminish the ability of all to purchase. It would reduce production to a mere fraction of what we now witness, and exert a corresponding influence upon the present condition of society, for reasons which are perfectly simple and plain.

Economy of production has led to an almost infinite subdivision of labor; so that the most common articles of use pass through many hands in the process of their construction. Some, apparently the most simple, are the joint product of many hundred workmen; it being found that a minute division of labor secures a much greater amount of production, and a much more perfect article. The greater part of persons employed in manufacturing have no interest in the article upon which they may be employed; neither does their labor give it a marketable value, till it goes through the hands of the last person in the process. It is the aggregate labor of all that fits it for the market. The great body of workmen employed have no exchangeable value to offer. What they had done or added to any particular article has no marketable value detached from the article itself. They cannot directly exchange the result of their labor for what they must have for their support. They therefore must be paid in money, which they can exchange for whatever they may stand in need of.

If there were no such thing as money, and all exchange of products were effected by an "exchange of kind," this would to a very great extent put an end to division of labor, because each person would be compelled to confine himself to the production of exchangeable values: that is, to the complete production of one article. If he were a manufacturer of cloth, he would be compelled to perform every step in the process, because no one would buy the article half finished. We should thus lose all we have gained by division of labor. But the evil would by no means end here. The manufacturer, after he had fitted his article for the market, would be obliged to go in pursuit of a customer; and before the right person could be found, the maker would probably lose in time and expense, much more than the cost of production. Without any further illustration of this part of the subject, it is perfectly easy to see that without money, society could have made but little progress, and its disuse would at once reduce us to a semi-civilized state.

We have above spoken of the use of money in the ordinary affairs of life with which we are all conversant. The same views apply with an equal force to foreign as to domestic commerce.

Gold and silver when used as money, being so much dead property, it is for our interest to use only the smallest possible amount of such; and we find that a greater part of the transfers of property are effected without their actual intervention. The exchanges for the most part are effected by the use of credits. Take as a familiar illustration the case of a New England cotton manufacturer. After his fabrics leave his hands, they pass through those of perhaps ten persons before they reach the consumer. He first sends them to his agent in Boston.—He forwards them to a commission house in New York. The New York merchant sells to

some western trader, who in turn sells to another, and so they pass from hand to hand, till they reach the consumer. Now if every person connected with the transfer was obliged to pay the value of the goods to the person who preceded him in it, this fact would require the use of a capital in gold and silver ten times greater than the value of the goods. Each person would be compelled to charge not only for his own labor but a fair compensation for the use of his money. And this additional charge would be so much reduced from the profits of the manufacturer. To save this additional expense, he sells on such time as will allow the goods to reach the consumer, and the pay to come back through the same channel through which they were forwarded; and the only money used in the transaction is that paid by the last purchaser. The manufacturer is thus enabled to receive the full value of his goods, less only the cost of forwarding to the consumer; and provided only that trusty agents are employed, he makes a much larger profit than he could have made were every transfer effected by the use of money. Experience has proved that in the long run more is saved by giving credits than by selling for cash; and it is upon the reasons here laid down, that credits in mercantile transactions are based. The abolition of credits would to a great extent check the transfer of merchandise, and consequently stop production just in proportion to the additional amount of property that would be required to be changed from a productive to an unproductive state.

But we find that the system of credits is extended still further than in the case cited for illustration; so that the use of gold and silver is dispensed with even in the payments by the consumer, who pays in paper money, which is in itself a credit. Without here going into the history of banks, or the causes, which have built up the present system, we find that in the affairs of business the money used has no intrinsic and substantial value. It represents, it is said, *money*, but this is admitted to a certain extent to be a fiction. It is received as money from the credit attached to those who issue it; and that if they do not represent gold and silver, they are based upon substantial values—something that can be exchanged for them. This form of credit enables a community to withdraw an additional amount of the precious metal from its unproductive state as money, equal to the excess of the issue of bills over the amount of specie upon which this issue is based.

In this point of view banking credit adds directly to national wealth, as it enables us to avail ourselves for production of an equal amount of property which without such would be required for currency. Banking institutions are therefore of equal advantage to all classes, though they seem to be for the exclusive benefit of the rich as they diminish the rate of interest, facilitate the transfer of property, diminish the cost of products to the consumer, and turn a large amount of property to productive uses.

In popular ideas, bank bills are based upon specie. Though such is not absolutely the fact, yet they never would be received as money unless it was believed that they could be converted into gold and silver at an instant's notice. But as general experience proves that there is no probability that all the bill-holders will present them for redemption at the same time, it is considered a safe rule to issue bills to four or five times the amount of the specie held by the bank. So long as a bank continues in good credit and possesses convertible property

enough to eventually redeem its circulation, the bills are seldom presented for payment.—Money in the shape of bank bills is in a much more convenient form than in the precious metals, and consequently they are preferred to the latter so long as they can be used with safety.

We thus enumerated the causes that have led to the use of paper money, and built up the present banking system of the country. This system has been developed and matured by long experience, and we have a right to suppose that it is the one best adapted to the mercantile and business community, just as ships and railways are adapted to the office they are to perform. One is just as necessary as the other. Each profession is to be trusted in its calling, and the rules and regulations by which each are guided and controlled are entitled to respect from all others.

Supposing, for instance, that our banks possess a given amount of specie, say \$5,000,000, and that this amount forms the basis of a circulation of \$250,000 in bank notes, it is very easy to see, from what has gone before, why its exportation should cause a scarcity of money, even though the movement be very slight. The exportation of \$1,000,000 in gold and silver, withdraws at least five times that amount from circulation. The shipment of \$10,000,000, withdraws in the same way, \$50,000,000. Banks, having lost the principal, are obliged to call in the representative. "Money becomes scarce," as the phrase is, and, obeying the same law of supply and demand which regulates the value of all kinds of property, also rises in value, and those who are compelled to purchase it, are obliged to give in exchange an increased quantity of other property, proportioned to the rise; consequently are just so much the poorer.

Under our banking system, this is the whole history of the causes of the abundance and scarcity of paper money, and of the effect which its fluctuations exert upon the value of property, and explains the reason why any sudden acquisition, or loss, of a large quantity of the precious metals, produces so suddenly such widely different results. It also shows the importance that the amount of gold and silver set apart as the basis for our currency should be as nearly as possible a stated quantity; the amount regularly and gradually increasing to keep pace with the progress of business and trade. If this result could be obtained, we should completely avoid the violent fluctuations which are of so common occurrence, and always attended with the most disastrous consequences.

We have seen that all contracts creating indebtedness are payable in gold and silver, but that these, in fact, very seldom intervene in business transactions, between members of the same community; their place being supplied by credits, and bank paper. Gold and silver, as a general thing, is only used to liquidate the final balance found to exist between parties, and then but seldom. We employ credits in every possible case, for the simple reason of the greater economy of their use.—But what is true of trade carried on by members of the same town or State, by no means applies to that existing between different nations. Here gold and silver are used in most of the transactions which take place, and all balances must be discharged in them. In a community like that of New York, for instance, the transfer of \$1,000,000 from one side of the street to the other, produces no effect upon the currency or the money market, because in either place, it serves as the basis of a paper circulation. But if at the winding up of the business

of the year, we find ourselves indebted to a foreign country to the amount of \$1,000,000, this amount in gold and silver immediately goes abroad to pay the debt. The exportation of the same produces for a time the same effect upon business that the exportation of \$5,000,000 would cause, provided our currency were made up entirely of the precious metals.

The argument stated, places in a correct light the theory of the balance of trade, and shows the consequences of having it in our favor, or against us. If the trial sheet shows \$1,000,000 against us, we must contract our currency \$5,000,000 to square the account. The immediate effect of this contraction is the same that the loss of so much property would cause. But this is not perhaps the most injurious effect of having the balance of trade against us. The probability of such an event keeps the public mind in a constant state of feverish alarm, which may at the same time be without foundation, and produce all the evil consequences of a real indebtedness. Such a state of public mind which we have last described, are the results of almost daily observation.

From what we have said, we think that we have shown that the nation which can keep all others in its debt, and in this manner be in a position to control the gold and silver possessed by its debtor, must maintain, by virtue of this, commercial supremacy. As at present organized, no civilized community can sustain its industrial pursuits without the use of credits based upon gold and silver; and that community which can control the supply of these metals, possessed by another, holds all the material interests of the latter in its hands, and can crush them at will. And as every nation seeks to break down every branch of industry of a rival, that comes in competition with her own pursuits, we must expect all with whom we have business relations, to use their power, whenever they can obtain it, or in other words, as far as this country is concerned, whenever they can turn the balance of trade against us. We have admitted, or rather proved, that it is for the interest of a community to use as small an amount of gold and silver as money as is consistent with a sound and well regulated currency; and that all surplus, beyond this want, and what is used in the arts, may be profitably exported. If by such exportation we can keep the balance of trade in our favor, no injurious consequences will ensue, because we exchange so much unproductive for productive capital. If, on the other hand, we are compelled from overtrading to withdraw from our banks any portion of what we had set apart to form the basis of our currency, we then part with our principal instead of the results of our capital, with our machinery instead of its own fabrics, and deprive ourselves of the instruments necessary to production. To succeed, we must have the "balance of trade" in our favor. The early writers upon the subject by no means exaggerated the importance of this, though the grounds upon which their reasons were based were entirely erroneous.

We think that we have, in what has gone before, indicated the policy which should guide us in the regulation of the tariff, and upon which all parties, protectionists and free traders, can meet. The tariff man says, "all I want is that government should so regulate the duty as to keep us out of debt."—The free trader can ask for nothing more. In arranging a scale of duties, there can certainly be no objection to our giving such encouragement as we

may be able to the home manufacturer. Here, then is a common ground upon which all can meet. The policy we have laid down would serve as an unerring and safe guide under all emergencies. It would save us from the consequences of over trading, would afford an adequate protection to our manufacturing interests, and would allow the greatest amount of FREE trade consistent with our best good.

Ohio.

Steubenville and Indiana Railroad.—We gave in our paper of the 27th of September, a brief notice of this work. As the whole road has since been placed under contract, to be completed in about two years, and as the road occupies an important line, and connects itself with some of the leading roads in the west, and is soon destined to take rank among our most important enterprises, we now give a more detailed statement of its condition and prospects.

The proposed road extends from Steubenville, an important town on the Ohio, between Wheeling and Pittsburg, to Columbus. It will be connected with Pittsburg by a road now in progress, and cutting off the great bend of the Ohio, by a line of only 42 miles. At Columbus, the Steubenville and Indiana railroad will connect with all the roads centering at that point, and branching out in every direction. When built, it will form the shortest route between Pittsburg and central Ohio and Cincinnati, and its friends claim that it will form a portion of the shortest line between Philadelphia and Cincinnati. Whether this be so or not, it will occupy a very favorable position in reference to other roads, and when constructed must be in possession of a large through business.

The route of the road traverses the counties of Jefferson, Harrison, Tuscarawas, Coschocton, Muskingum, Licking and Franklin, all of which are known to rank in wealth, and in natural resources, among the first in the State. The following is a statement taken from the report of the company, and will show the amount and value of agricultural products on the line of the road:

Cattle..	107,799 head, worth \$20 00..	\$2,155,980
Sheep..	600,449 " " " 1 50..	900,673
Hogs...	193,600 " " " 3 00..	580,800
Wheat..	5,041,212 bush., " 0 60..	3,024,727
Corn...	7,571,565 " " 0 30..	2,271,469
Wool...	1,501,122 lbs. " 0 35..	525,392

Making.....\$9,459,041

But no returns are here included of the number of horses and mules, and of the products of oats, rye, barley, hay, tobacco, potatoes, turnips, fruit, butter, cheese, culinary vegetables, poultry, etc.—Estimating these at \$2,500,000, we have, in round numbers, a total valuation of agricultural resources and products of \$12,000,000. From these data, we may also make an approximate estimate of the yearly surplus and value of the same, viz:

Wheat..	3,444,449 bush., worth \$0 60..	\$2,066,669
Corn...	2,000,000 " " 0 30..	600,000
Wool...	1,501,122 lbs., " 0 35..	525,392
Cattle...	25,000 head, " 40 00..	1,000,000
Hogs...	100,000 " " 5 00..	500,000
Sheep...	50,000 " " 1 00..	50,000
Other articles.....		1,258,000

Total in round numbers.....\$6,000,000
Reduced to freight the above enumerated products would yield.....184,255 tons.
Add $\frac{1}{2}$ for articles not enumerated.... 61,415 tons.

And we have.....245,670 tons, which is without any estimate of tonnage from coal or manufactured articles.

This result compares favorably with every other portion of the State. The report institutes the fol-

lowing comparison between the wealth and productions of the counties traversed by the Little Miami, Mad River and Lake Erie, the Columbus and Xenia, and the Cleveland and Columbus railroads, with those on the line of the Steubenville and Indiana railroad:

Comparative Statement of the population, agricultural products and valuation of an equal length of road from three important roads, and the Steubenville and Indiana road.

	Miles.	Populat'n.	Ratio.
Mad River and Lake Erie..	134	141,753	49
Columbus and Xenia.....	55	74,839	55
*Columbus and Cleveland..	135	173,788	64
Total.....	324	390,379	
Av. of these lines 149 miles long.....	149	170,526	50
Steubenville and Indiana..	149	233,474	62

	Cattle.	Sheep.	Hogs.
Mad River and Lake Erie..	82,404	291,030	134,036
Columbus and Xenia.....	48,982	111,210	95,503
*Columbus and Cleveland..	110,303	450,698	108,608
Total.....	241,689	855,938	338,147
Av. of these lines 149 miles long.....	111,147	393,628	155,505
Steubenville and Indiana..	107,799	600,449	193,600

	Wheat.	Corn.	Total tax value..
M. Riv. and L. E..	3,613,516	4,798,299	28,856,820
Colum. and Xenia..	1,120,420	4,155,472	22,395,346
*Col. and Cleve'd.	2,488,703	4,182,873	34,762,675
Total.....	7,202,639	13,136,644	86,014,841
Av. of these lines 149 miles long..	3,312,324	6,041,234	39,537,812
Steubenv. and Ind.	5,041,212	7,571,565	53,938,854

* Franklin county deducted, being included in the Columbus and Xenia line.

In addition to the agricultural resources of the country traversed, the route passes for a long distance through one of the most extensive coal fields in the State, and must receive a large income from the transportation of this mineral.

The report of the company, which is an admirably prepared document, contains a large amount of valuable statistics, adduced for the purpose of showing the probable earnings of the above work, compared with other roads in Ohio, now in operation. We hardly think it necessary to publish evidence of the probable amount of business of a western road, for the reason that all these matters are well understood by our business men and capitalists. We all know the unlimited capacity of the west for production, and when a road is built, and free from injurious competition, no one doubts that it must have an enormous business, compared even with our eastern roads.

In relation to its through business, we copy the following from the report:—

THE THROUGH TRADE.

Having indicated the sources from which the local, or way business of our road is to be derived, and shown the nature and present extent of resources in this respect, as well as something of the extent to which those resources may be expanded and developed by opening up new channels of trade, we will now, very briefly, examine its comparative merits as a means of connection between the west and seaboard. To compare advantageously with other lines, as a means of attracting a due proportion of the great internal trade of the country, which is growing so rapidly, and the future magnitude and importance of which can hardly be estimated, the road must possess equal, if no greater facilities as to the time and cost with which it can perform like service. Both time and cost depend on the comparative length, and general character of the road as to grades and curvatures; and the relative expense of working it, including the cost of the road itself. Much also depends on the nature and extent of the connections formed at

the western terminus and along the line of the road. In illustration of these several points, we present the following facts.

The distances here stated have been ascertained with as much accuracy as existing data will furnish. In most instances, they are the actual distances of located railways; in others, actual surveys of routes for roads in contemplation, and in instances where no surveys have been made, the distances by the supposed shortest route are given. For instance, no railroad between Wheeling and Marietta can be located, so as to make the distance less than by the river; simply because the road must be located along the valley of the river, and near the margin of the stream.

FIRST—Comparative Statement of Distances from Cincinnati, and Columbus, Ohio, to New York, Philadelphia and Baltimore, by the several proposed lines of Railroad.

1st.—Cincinnati to New York.	Miles.	Loss.	Gain
Via Cleveland, Dunkirk and Piermont.....	883	127	
" Parkersburgh, Baltimore and Philadelphia.....	782	101	
" Columbus, Steubenville and Pittsburg.....	756	127	
2d.—Cincinnati to Philadelphia.			
Via Marietta, Wheeling & Hempfield.....	686	27	
" Parkersburgh and Baltimore.....	685	1	
" Zanesville, Wheeling and Hempfield.....	674	12	
" Columbus, Steubenville and Pittsburg.....	659	27	
3d.—Cincinnati to Baltimore.			
Via Parkersburgh.....	587	76	
" Wheeling and Baltimore and Ohio road.....	662	75	
" Wheeling, Hempfield, and Harrisburgh.....	663	76	
" Steubenville and Pittsburg.....	636	49	
4th.—Columbus to Baltimore.			
Via Wheeling, Hempfield and Harrisburgh.....	545	27	
" Wheeling and Baltimore and Ohio road.....	544	1	
" Steubenville, Pittsburg and Harrisburgh.....	518	27	
5th.—Columbus and Philadelphia.			
Via Zanesville, Wheeling and Hempfield.....	556	15	
" Steubenville and Pittsburg.....	541	15	

From these comparative distances, we may deduce the following conclusions:

1st. Philadelphia has an advantage in distance, over New York by the Erie road, for trade at Cincinnati, of 224 miles.

2d. The shortest route from New York to Cincinnati is through Philadelphia and Pittsburg.

3d. The next shortest is through Baltimore and Parkersburgh, the difference in favor of Philadelphia and Pittsburg being 26 miles.

4th. The shortest route between Philadelphia and Cincinnati is through Pittsburg, by 15 miles.

5th. Baltimore has an advantage over Philadelphia for trade at Cincinnati, of 72 miles.

6th. The shortest line from Columbus to Baltimore is through Pittsburg, by 27 miles.

It is also apparent, that the line of the Steubenville and Indiana road is the shortest and most direct, by which Philadelphia can reach Cincinnati and Columbus. And whilst Baltimore has an advantage over Philadelphia for trade concentrated at Cincinnati, Philadelphia has, through the line of our road, an advantage over Baltimore, to the sources from which all that trade is drawn from all parts of Ohio, Indiana and Illinois, being north of a line drawn from Columbus to Indianapolis, and thence to the Mississippi.

SECOND—General Character of the Road.—The highest grade on the road is 39½ feet per mile, and the shortest curve has a radius of 1910 feet. The maximum grade occurs but seldom, much the greatest portion of the road having grades ranging from 3 to 25 feet per mile.

On the Baltimore and Ohio railroad the minimum radius of curvature is 600 feet, and on the Western (Boston and Albany) and the Pennsylvania Central railroads, the minimum is 955 feet.—

Each of these roads has maximum grades more than double that of the Steubenville and Indiana railroad, and yet with these high grades and short curves they are worked with great ease and profit, accommodating a large freight and passenger traffic with a facility and regularity equalled by few other roads in the country.

With a minimum radius of curvature double and treble, and a maximum grade less than one-half that on the above roads, the Steubenville and Indiana railroad will be peculiarly well adapted for rapid and cheap transportation. For passenger trains a speed of thirty miles per hour, including stoppages, can be attained with comparative ease, and much heavier loads can be hauled over its light grades by locomotives of equal weight and power.

When the Steubenville and Indiana railroad is completed, the trip from Cincinnati to Pittsburg can be made in 10 hours, and from Pittsburg to Philadelphia in 14 hours, making the time from Cincinnati to Philadelphia 24 hours; and western products going eastward by this route no where encounter grades exceeding 53 feet per mile, and west of the Ohio river none exceeding 39½ feet per mile, exhibiting advantages which it is believed are afforded by no other line.

THIRD—Comparative cost of the road, and expense of working it.—It has been estimated by competent engineers, that each mile saved in distance is equivalent to a gain of \$50,000 in the cost of a railroad. By applying this rule of saving to the gain in distance which our road has, over any other between Philadelphia and Central Ohio, we obtain a material advantage in this particular, to start with. But in order to compare the original cost of two lines of railroad, it is essential that all particulars that go to make up the entire character of the works compared must first be determined and ascertained. Grades and curves on a railroad are distance in another form. Here it is the equated distance, distance equalized in all these particulars, that must be compared, in order to arrive at correct results. We have not the necessary facts to go into such a comparison, and will therefore only state our conviction, that no railroad can be constructed, extending from the Ohio river, above Portsmouth, to Columbus, that will be capable of maintaining any advantages, in these particulars, over our road. The first 25 miles of this, and all other roads extending from the upper Ohio river into the interior, is the most costly part of the road, and may reach, but will not exceed, \$25,000 per mile. After reaching the valleys of the Connotton, Stillwater, and Tuscarawas, the cost will be below the average cost of similar works in the interior of the State. As coal abounds on the line, fuel, one of the principal items of cost in working a railroad, will be obtained cheaper than on most other western roads.

FOURTH—Connections at the Western terminus and along the line of the road.—Our present views and efforts are directed to the placing our road in connection with the several lines of railway formed and concentrated at Columbus. By these connections we unite, 1st, with Cincinnati, by the Columbus and Xenia and Little Miami roads. 2d. With Springfield, and thro' it with Indianapolis, Central Indiana, Illinois and St. Louis, all in a nearly direct line westward. No other railroad, whatever and however located, can connect Pittsburg and Philadelphia with these points, and this vast interior, by as short and direct a line as this.—Nature herself has formed it, and no skill in the science of engineering can substitute a better one. From Indianapolis, nine independent railroads are in process of construction, radiating from this central point in all directions to the margin of Indiana, from which common centre our line forms a direct eastern extension, diverging neither to the north nor south until after it passes Columbus, and thence nearly due east to Pittsburg.

3d. At Newark, which is 36 miles east of Columbus, we connect with the Mt. Vernon, Mansfield and Sandusky City road, now in operation, and through which we have access to the lakes.—

4th. At Dresden, which is about 20 miles east of Newark, our road is but 16 miles from Zanesville, itself one of the most important places in the interior of the State, and furnishing a large local business for a road. An extension of our road to

Zanesville will place it in connection with the Zanesville and Wilmington road, which connects with Cincinnati through a more eastern, but equally productive tier of counties than the Columbus and Xenia road. To prove the directness of this route, let a line be drawn on any good map, from Cincinnati to Zanesville, and thence through Steubenville to Pittsburg, and it will appear in a most striking light.

It is important to observe that, with the exception of the connection at Newark, all the rest form, with our line, *continuous lines in the same general direction*; that they are not mere intersections of roads, crossing the tracks of each other, and looking to different destinations, by routes forming strong angles with each other; on the contrary, they are but links in one great east and west chain of railways, uniting the Atlantic seaboard with the great west, through the very hearts of Ohio, Indiana and Illinois.

We have but one other fact to allude to as illustrating the comparative advantages of our road. Comparative distance is not the only element which determines the relative advantages of railroads. Large cities exert an attractive influence upon the course of travel and trade, similar to that of material bodies upon each other. They divert it from straight lines, when straight lines would not touch them. Pittsburg is such a point, in the course of trade between the east and west. Her influence in this respect must be admitted, and it would be just as wise to locate a road from Baltimore to New York, which should pass round Philadelphia, as to attempt to divert the trade between Philadelphia and the west from passing through Pittsburg. This influence results from her population, her position, her existing commercial connections and relations, and her manufacturing interests. To say nothing of the local trade secured to a road by its connection with all these interests, this population, the project of its immense manufactures in iron, glass, cottons and other articles, will not the interests of any railroad, as a through line, for the trade in question, force a connection with Pittsburg? Of the several lines of railroads above compared in respect to distance, the Steubenville and Indiana, and the Ohio and Pennsylvania are the only ones which touch Pittsburg in their course from the Atlantic cities to Cincinnati and the west; and the Steubenville and Indiana road effects this desirable object, not only at no disadvantage as to distance, which this important fact might still be sufficient to overcome, but with a positive saving in distance over any other route, except that from Baltimore to Parkersburgh, and thence to Cincinnati, but which does not reach Central Ohio, Indiana and Illinois.

Such, then, are the claims of the work entrusted to our management, to the confidence and support of its friends. We have endeavored, in all honesty of purpose, to state facts, and only facts, in illustration of its claims. It is not our purpose to draw doubtful inferences, or to state speculative estimates of the profits of an investment in this work. From the facts which we have endeavored to arrange in an intelligible shape, each one interested can draw his own conclusions. The important points which we have endeavored to establish are these, that the resources of the road, for local business, will compare advantageously with those of the most successful existing railroads in Ohio; and that its advantages, for through business, are such as to secure to it a fair proportion of the immense and rapidly growing internal trade and travel between the east and west.

It is but a few years, since the only outlet to this trade to the market of the world, was through the Mississippi and its tributaries, to New Orleans. The genius of CLINTON first gave a new, and opposite direction to this vast current of business, which greatly exceeds, in magnitude and importance, all foreign trade of the country. As soon as source of communication was opened between the waters of Lake Erie and the Hudson, the trade of the west began to move northward. The period of time since this movement began has been short; and yet in that short period, the State of Ohio has been traversed through its entire extent, from the Ohio river to Lake Erie, by four great artificial works; viz, the Ohio and Miami canals, and the Cincinnati and Sandusky city, and Cincinnati

nati and Cleveland railroads. The amount of business is equal to the capacity of all of these. But one improvement has, as yet, been commenced, to traverse the State in an eastern and western direction; viz, the Ohio and Pennsylvania railroad. Its general course is north of west, looking particularly to northern Ohio, the Lakes, Indiana, Illinois and Michigan. We here present the claims and advantages of a second line, starting from the same point, and extending in a diverging line from the former, to the south west. Both of these lines will connect with the Atlantic cities, by a great saving in distance over all existing routes. We believe that the local business alone, would justify the construction of both. We see no necessary conflict in interest between them. Each has its distinct and proper use and purpose. If the trade to New York can sustain four routes, will not that to Philadelphia give profitable employment to two? And may not even a portion of the trade of New York and Baltimore be attracted by the superior advantages of the great middle route, between these and portions of the west? The west is the great centre of our country; not only its geographical, but its political centre; and the great source from which exhaustless agricultural products the basis of its wealth and of its commerce, are drawn. How many works of this kind may be constructed, radiating from this great centre to the eastern and western borders of the country, before their number will exceed the requirements of its external trade? Will not every gorge in the Allegheny mountains be occupied by such works, before their number will be too great?

For all the purposes here indicated, the powers and privileges conferred by our charter are ample. It expressly authorizes the construction of "a railroad from Steubenville to Mt. Vernon, in the county of Knox; thence by the most eligible line to the Indiana State line," and by an amendatory act passed February 24, 1848, the company is "authorized to construct a branch road from Coshocton, in Coshocton county, to Columbus, in Franklin county, by way of Newark, in Licking county." And by the same amendatory act, "the mayor and town council of the town of Steubenville, in Jefferson county, and all other incorporated towns through, or near which, said road may be located; and the commissioners of Jefferson and all other counties, and the trustees of the several townships through which said road may be located, are each respectively authorized to subscribe to the capital stock of said railroad company, on behalf of said townships," on the same conditions, etc., as in other cases. The value of these provisions will be understood, when it is recollected that under the new constitution of Ohio, no such privilege can be conferred upon any county, city, township or town within the State. The power to do so is expressly withheld from the Legislature.

With these facts and general views of the objects and advantages of the work entrusted to us, we submit its claims to the judgement of those interested in its construction. It is not a work to be pushed through an uninhabited and uncultivated district of country, in order to reach something valuable beyond it. On the contrary, it traverses the most populous, the most productive, and wealthiest agricultural and mineral region of Ohio; it derives its means of construction mainly from the population along its track; it connects the country traversed by the shortest possible line of railroad with the markets of the east, and those markets with the products of the west; presenting to both, a direct east and west line, as a substitute for circuitous northern connections; and it unites the largest cities of the west with each other. Thoroughly convinced ourselves of the importance of the work committed to our charge; that its advantages are appreciated by those who will be benefited by it; that the wealth of the country it traverses is adequate to its construction, and its local resources alone sufficient for its profitable employment; that it will occupy a commanding position in reference to the great trade between the east and the west; that every interest requires the completion of the work at the earliest practicable period; and that our present subscriptions and future expectations justify the measure, we have advertised for proposals to be received up to the first of October next, for the grading and masonry of the entire

line between Steubenville and Newark. We therefore congratulate the stockholders and the public, that we are about to commence active operations; and assure them that nothing in our power shall be wanting, to carry it to a speedy and successful completion.

OFFICE OF THE STEUBENVILLE AND INDIANA RAILROAD COMPANY, Steubenville, Aug. 22, 1851.

Rapids Convention at Burlington, Iowa.

In our last we alluded to this convention, the report of the proceedings of which, we had not then received, they have since come to hand, and we give below the memorial to be presented to Congress, and the resolutions expressive of the sense of the convention.

The two great obstacles to the navigation of the Mississippi River are the Des Moines and Rock River Rapids. These in stages of low water, appear an almost impassable barrier to the passages of boats. It is claimed that a very small sum would remove the obstacles, and that the expense of their removal should be done by the General Government. It is hardly necessary to attempt to prove the last proposition. The Mississippi River is as prominent a feature in our geography as the Atlantic coast, and the commerce that is moved upon it, nearly if not quite equal, to the whole of our foreign trade. Certainly there can be no reason why the commerce of one should not receive the same attention and care as the other.

The convention was very numerously attended by delegates from Missouri, Illinois, Iowa, Wisconsin and Minnesota, and was addressed by some eloquent men from these States. The best feeling prevailed. A committee was appointed to prepare statistics of the trade and commerce of the river to accompany the memorial to Congress. The committee was of the following gentlemen, viz: H. W. Starr, David Rover, J. H. Tallant, J. C. Hall, L. D. Stockton, and W. F. Coolbaugh, all of Burlington.

It seemed to be a prevailing opinion in the convention that there was great danger that merchandise produce would leave the river for artificial modes of transportation, such as canals and railroads, and that the eastern cities were making rapid encroachments upon the trade of the leading towns on the Mississippi river.

MEMORIAL

To the Senate and House of Representatives of the United States, in Congress assembled:

Your Memorialists, a convention of two hundred and ninety-four delegates from the State of Wisconsin, Iowa, Illinois and Missouri, and the Territory of Minnesota, assembled at Burlington, in the State of Iowa, on the 23d and 24th days of October 1851, respectfully call the attention of your honorable body to the obstructions to the navigation of the Mississippi river, usually known as the Des Moines and the Rock River Rapids, and ask that the same be removed by the general government, so that a free and practicable channel be opened through them.

Your memorialists insist upon the seasonableness, the justice, and the perfect practicability of their request. The Mississippi being a great National Highway, this is a National work, and has been so regarded by a previous Congress, in making appropriations for the same object, which, though too small to complete the work, resulted in great benefit to the navigation of that river.

Your memorialists further refer your honorable body to the resolutions passed by this Convention and to statistics which will be embodied and furnished by a committee of this body.

Your memorialists further state, that the character of those obstructions is such as greatly to cripple the commerce of the river, during the larger portion of the time in which it is open for navigation; and that a removal of the same, while it

would conduce to the prosperity and convenience of the people dependent on the river as an outlet, would also enhance the value and facilitate the settlement of the government lands of the Northwest, situate above said Rapids, and would be economy to the government in the end, in a saving of cost of transportation of supplies and armament.

Adopted in full convention, and signed by the officers of the convention, the 25th October, 1851.

RESOLUTIONS.

Resolved, As the opinion of this convention, composed of delegates from the States of Illinois, Missouri, Wisconsin and Iowa and the territory of Minnesota, that the river Mississippi is a great national highway, the control and jurisdiction of which have been reserved to Congress, and that it is the duty of the National Legislature to make such improvements in the navigation of said river as will place our commerce upon an equal footing with that of the Atlantic States of this Union.

Resolved, That the interests of nine States and one Territory imperatively demand the prompt action of Congress in making adequate appropriations for the removal of the obstructions to the navigation of the river Mississippi formed by the Des Moines and Rock River Rapids.

Resolved, That experience and testimony of the navigators of the Upper Mississippi, demonstrate the correctness of the surveys and the report made by Lt. Lee in the years 1837 and '38, and that no doubt is entertained by this convention of the practicability of the permanent improvement of the channel of the river at the Des Moines and Rock River rapids, if said plans should be carried out: but this convention at the same time that it gives this opinion, refers to the action of Congress and of the officers to whom the execution of the work may be entrusted, asking only, with all the earnestness that right and justice demand, that free and unobstructed navigation shall be guaranteed to us.

Resolved, That the Senators and Representatives in Congress, from the several States represented in this convention, be and they are hereby respectfully requested to use their personal and united exertions to secure the early appropriation of an amount of money which shall be adequate to complete the removal of the obstruction to a safe and speedy navigation of said river.

Improvement in the Steam Engine.

A Mr. Harris, of Boston, has patented an improvement in the steam engine, of which the Boston Atlas gives the following description:

"The engine may be constructed in any of the usual forms, except the mode of communication between the crank shaft and the cross head, or lever beam. In this the novelty and improvement of the invention consists. In the ordinary mode of producing a continuous revolving motion from a reciprocating one, a single crank and one connecting rod are used, the effect of which is an unequal leverage at corresponding divisions of the outward and return strokes. To counteract the effect of this a heavy fly wheel is added, which diminishes the effective power of the engine. These evils in a great measure are remedied, and at the same time produce a gradual check to the momentum of the piston by use of two cranks, placed at right angles with each other, connected by means of rods to the ends of an oscillating lever, whose fulcrum is a pin attached to and travelling with the cross head.

At the commencement of the stroke, the crank pins stand at equal distances above and below the central line drawn between the cylinder and crank shaft, consequently no motion can ensue, and the cranks are on the dead point. Now, if the shaft be turned in either direction, on the admission of steam to the cylinder, the majority of the power will be communicated to the crank which has the greatest leverage, and the shaft will revolve in that direction. When the cranks have made a quarter revolution, the leverage is nearly equal on both, and the piston has travelled over one half its stroke. On continuing the revolution, the crank which at the commencement had the greatest leverage now has the least, the majority of the power being transferred to the other, which continues to the end of the stroke, when the cranks assume their other dead point.

The office of the oscillating lever is to equalise or average the combined effects of the cranks on the piston.

In this engine the cylinder is one-sixth greater (or as 24 is to 29) than that of the common engines with a crank of the same length, and turns the dead points independent of the piston, which in a measure checks its momentum, and thus avoids the pressure upon the journals and boxes, and consequent wear of both."

American vs. English Railroads

"The American people number 23,000,000 of souls, to whom, besides the natural yearly native increment, an addition is made by emigration of between 400,000 to 500,000 settlers mostly in the prime of life, and many with hard cash in their pockets. Wages are in the States so high, and the whole population so well off, that they can afford to spend money in traveling more universally and to a greater extent, than the inhabitants of any other country. Intensely migratory, and proverbially locomotive themselves, the annual influx of strangers and emigrants passing on to their settlement, or traveling through the country, fill every medium of conveyance to every quarter, and to overflowing. Wood is to be had everywhere for the cutting. Irish navigators present themselves on the arrival of every ship. Land may be had for nothing—premiums even offered to railway projectors by proprietors to carry their lines through their properties. There are no lawyers and jobbers to run up enormous bills in Parliamentary contests. Economy is uniformly consulted—cheapness all ways commended. The result, reluctantly acknowledged, and hastily slurred over, by our stags, our capitalists, and the common jackalls of the press, is neither more nor less than this: Twenty-eight millions of British have 7,000 miles of railway, and 24,000,000 of Yankees have 10,000. The English paid £250,000,000 for their 7,000 miles, while the Americans constructed and furnished 10,000 miles for \$66,654,000. In a word British railways cost \$35,700 per mile, and Yankee railways average \$6,500, or little more than one-sixth of the cost of our own. It is obvious, from these data, that if the London and North-western can afford to divide 5½ per cent. the line from New York to Albany or Buffalo should yield 33 per cent.; and it may, on the most assured evidence, be with great safety concluded, that the account contained in our last, of American dividends ranging from 6, 8, and 10 to 15, and even 19 per cent. scarcely comes up to the most moderate estimate of the probabilities of the case.—*London Despatch.*

Ohio.

Junction Railroad.—The iron way between Cleveland and Sandusky city is to be in operation early in 1853. Some twelve miles of the road from Olmstead west are now nearly ready for the iron, and the substantial bridge over the east branch of the Black River at Elyria is about finished. The contracts for building the road from the 12 miles spoken of to Sandusky city have been let, and the work is to be pushed forward vigorously. The contractors are to have their jobs finished by the 1st of January, 1853.

From Elyria the road is on a direct line to Amhurst Corners where it crosses the Beaver creek and thence to Vermillion river, which is crossed near its mouth. The line to Sandusky is very straight, of low grade, and the estimated cost of construction is less per mile, we understand, than the cost of the C. C. & C. road. The only portion of the road not under contract is from Olmstead to the mouth of the Cuyahoga. This we are informed is to be let soon.

From Olmstead to Rocky River the line of the Junction road is not far from C. C. & C. railroad, and to get a feasible place to bridge Rocky river it crosses the C. C. & C. road twice. Thence to the Lake the line is very straight, crossing the Ridge road to Elyria near Camp's tavern, west of Ohio city. The road is to reach the valley of the Cuyahoga by a grade along the lake bank, crossing the old river bed on the bar at its mouth and terminating on the island.

The Engineer of the road supposes some plan of extending the track across the harbor as often as is necessary can be adopted, which will not material-

ly interfere with the interests of navigation. The Depot grounds, machine shops, etc. are to be on the Ohio city side of the Cuyahoga.—*Cleveland Herald.*

Hamilton, Oxford and Indianapolis Railway.—Henry C. Moore, Engineer, has just completed a preliminary survey of that part of the proposed railway from Hamilton by Oxford, College Corners, Connersville and Rushville to Indianapolis, which lies in the State of Ohio. He finds a practicable line of easy curves and grades, and estimates the entire cost of preparing the work for the rolling machinery at \$15,000 a mile. The line pursues the Four Mile Valley to Oxford, and the College Corners, on the State line—the distance is 17 83-100 miles. This line approximates to that surveyed from a point near Rossville up Four Mile, to Richmond, Indiana, and occasionally crosses it. From this we infer that it will be for the interest of the parties, to make the greater portion of the distance a common road, with branches at the extremes of the common road to Hamilton and Rossville at one end, and to Richmond and Connersville at the other.—*Cincinnati Gazette.*

Ohio and Mississippi Railroad.—The Louisville Courier learning from "a source entitled to implicit confidence," that the entire line of the road has been constructed for by H. E. Seymour & Co. of this city.

Massachusetts.

Fitchburg Railroad—Watertown Branch.—The track of the Watertown branch was completed into Waltham on Monday morning, and makes a third track of the Fitchburg railroad into that town.—The double track of the Fitchburg railroad into that town passes through a part of West Cambridge, near the Watertown line, into Waltham, and the third track is an extension of the Fresh Pond and Watertown branch into the same village. A new and handsome brick depot has recently been erected at Waltham, at the point of junction. This third track will enable the Fitchburg company to furnish additional accommodations for manufacturing establishments at Waltham, on the Charles river, and will also afford additional accommodations to the travel to and from that thriving village. The trains will commence running over the new track about the first of next month.

The new depot, mentioned above, we understand was planned by Mr. Geo. A. Parker, and is a model structure, both in its style and finish. The roof projects over a brick side-walk, and affords good protection from the weather. The rooms are spacious, well arranged and lighted, and have a perfectly home look about them. The ladies room, having access like the other to the ticket office, is handsomely carpeted and furnished, and is an exceedingly pleasant apartment for their use. Altogether we regard it as a model depot, highly creditable to Mr. Parker's skill and taste.—*Bunker Hill Aurora.*

Tennessee.

Nashville and Mississippi Railroad.—We learn that Messrs. Hazelhurst and Greene, two able and energetic Engineers, accompanied by an efficient corps of assistants, set out yesterday for the purpose of making an instrumental survey of the contemplated railroad to connect Nashville with the Mississippi river at, or not far distant from Madrid Bend—at least we understand the base line first to be surveyed will extend to that point on the Mississippi.

This line of road is intended as a continuation of the east Tennessee and Virginia road, through the east Tennessee and Georgia railroad from Knoxville to Cleveland, or some other point, where a short line of road, (also in contemplation,) will connect it with the Nashville and Chattanooga road at Chattanooga—thus forming a continuous and direct line through the valley of Virginia, east, middle and western Tennessee, to the great Mississippi; at the same time giving us access to the southern portion of Kentucky—and if we cast our eyes westward still further, we find it but a step as it were to unite us with the great Pacific railroad now in course of construction from St. Louis to the western limits of the State of Missouri,

Our readers will remember Mr. Hazelhurst as the Engineer, whose able report of a reconnaissance of this same line was published not long since, and which proved not only the practicability, but also the cheapness with which a road in that direction could be constructed.

We look to the early completion of this road to the Mississippi as of paramount importance not alone to Nashville, but equally so to all Tennessee. A mere glance at the map of the State, and a reference to the other lines of roads now completed, and in progress of construction, will, we feel convinced, satisfy others as it has us, that this is at least one of the most important enterprises of the kind which has yet been set on foot by our people.—*Nashville True Whig.*

New York.

Potsdam Railroad.—The Survey of this road is completed, and Mr. Broadhead, the Chief, will proceed at once to make the estimates and profile. A report will be made in the course of six weeks. We learn that the route is a most remarkable one, being almost in an air line and of easy grade; from this place to Antwerp there will not be at any one place three feet cutting; the surface of the soil being a grade line. Passing through a rich farming country, near extensive coal-bed, and in the vicinity of a large lumber tract, costing less than the average roads, it must prove a good and profitable enterprise. It must be built.—*Watertown Jeff.*

Virginia.

The annual meeting of the stockholders of the Orange and Alexandria railroad company, was held in Alexandria on Thursday the 6th inst. Resolutions were adopted complimenting the officers for the rapid progress made in the construction of the road. John S. Barbour, Jr. was elected President in place of Mr. Smoot, resigned. A resolution was offered by Mr. Wm. D. Massey, tendering the thanks of the stockholders to Mr. Smoot for the efficient manner in which he discharged the duties of his office while President of the company, which was adopted.

Illinois.

Peoria and Burlington Railroad.—We learn from Mr. O. Houston, one of the contractors on the Peoria and Burlington railroad, that the work under his charge, is getting along finely. One mile of the road, commencing at Clark's, three miles from Peoria, and leading towards the city, is completed. Mr. Houston is working about 50 hands, and so far, he says the labor is performed without the least difficulty. This week Mr. H. intends adding to his number of hands, so that he may prosecute his work with greater rapidity.—*Peoria press.*

Baltimore and Ohio Railroad.

Through line to Cincinnati.

We would call the attention of steamboat and stage proprietors to the advertisement in this evening's paper of the General Superintendent of the Baltimore and Ohio railroad, inviting their co-operation in establishing a through line from Baltimore to Cincinnati. About the 1st of next month the railroad will be opened to Cheat river, from which a line of stages may run (five miles) to the northwestern turnpike, and thence to Parkersburg; and on the 1st of April next the road will be completed to Tygart's Valley, on the northwestern turnpike, about one hundred miles from Parkersburg. A daily line of cars will then be run to Tygart's Valley, and the line of stages, over the northwestern turnpike, will take passengers to Parkersburg, whence a daily line of steamboats will take them to Cincinnati.

It is expected that the time required to carry passengers over this route, from Baltimore and Washington to Cincinnati, will not exceed forty-eight hours, and that the charge will not be over \$12 50 to \$13 50.

That the road will be completed and open for travel, on the days heretofore fixed by the Chief Engineer, is certain. There are now five thousand laborers employed actively on the line—the Kingwood Tunnel (a mile in length) is within three hundred and fifty feet of being opened through, and every where along the whole line the utmost

activity prevails—so that by the 1st of May next the road will be opened for travel to Fairmont, on the Monongahela river, in Marion county, Virginia, when the daily line of cars will run to that point.—*Patriot*.

Coal for Locomotives.

We copy the following from the Pittsburgh Gazette, in reference to the use of coal for locomotive engines.

To Ellwood Morris, Esq., Engineer Chartiers Company;

Sir—Agreeably to your instructions, I weighed upon my tender last week two tons or 60 bushels of coal, from the Chartiers mines, (Pittsburgh coal,) and using a few chips of wood for lighting the fire only. I ran the Baldwin engine "John Thompson" of 15 tons weight, (6 drivers connected,) with the 60 bushels of coal, a lineal distance of 60 miles, drawing the usual loads over our grade of 145 feet per mile, and curves of 550 feet radius, firing up 5 separate times.

This quantity of coal was burned in firing up, running, and standing under steam, while performing the above distance of 60 miles.

Making one bushel per mile run, Pittsburgh coal being used exclusively, and no wood carried on the tender.

I find this coal makes a very free, hot, and manageable fire, very well adapted to locomotive purposes.

Very respectfully,

EDMOND MAHONY,

Engineer of locomotive.

Mr. Morris states, in a communication to the Pittsburgh Gazette, that "the amount of coal required for the propulsion of this 15 ton freight engine has been only one bushel per mile run."

At the present rates of coal in this market, therefore, the cost of fuel per mile run by locomotives, may be reduced, by using Pittsburgh coal, to four cents per mile travelled.

This is the first time (I believe) that Pittsburgh coal has been used in firing locomotives, and its success has been complete."

Indiana.

Railroad from Goshen to Peru.—The Kosciusko Republican of a recent date says:—

"On last week the Directors of the Kosciusko, Elkhart and Miami railroad company met at Warsaw and appointed James S. Frazier Treasurer of the company, and David R. Pershing Secretary—Mr. Pershing was also appointed an agent to procure releases of right of way along the route."

From the determination shown by the people along the line of this road, we have no doubt of its speedy completion.

The stockholders in the northern Indiana road are greatly interested in the construction of this road, and will, no doubt, aid in completing it so soon as they get through their controversy with the Central Michigan road.

Operations in Hurl Gate Channel.

Lieut. W. A. Bartlett, of the United States navy, reports that he made a thorough examination of Pot Rock on Friday, and found not less than eighteen and a quarter feet of water on any part of the rock at low tide. At the commencement of operations the rock was 54 feet high, and stood in water 62 feet deep on one side and 60 on the other, being within 8 feet of the surface at mean low water. Mr. Grinnell's subscription of two thousand dollars becomes due when this rock is removed to the depth of twenty feet, and he has also promised a further sum of three thousand dollars when it is removed to the depth of twenty-four feet. To obtain the results so far accomplished, one hundred and forty-three submarine charges have been fired, consuming 16,429 pounds of powder, and it is estimated that one thousand kegs of powder will yet be required to remove the rock to the desired depth of twenty-four feet.

Ten charges have been fired on Frying Pan, and five charges on Way's Reef. A shaft has been

sunk in Way's Reef, 8 inches in diameter, and nine and a half feet deep. This will be charged with a canister of powder seven feet long, and fired under water by means of a galvanic battery. The tripod and drill have been placed on Hallet's Point, and the drilling of that rock has been commenced.

Cleveland Steam Engines.

For many years the best steamboat and propeller engines manufactured in the West, have been made at the Cuyahoga works. They have been unpuffed save in their own puffing, but their finish, power and excellent performance, have given their builders an enviable reputation. This establishment is constantly receiving orders which it is unable to fill, and others are springing up here which turn out superior work. We notice by the Monroe (Wisconsin) Sentinel, that Messrs. J. Franklin & Co., of this city, have recently put in operation at Monroe two of their engines, which we are informed are not in any respect surpassed by engines from the most celebrated Eastern works. The Sentinel says:

"We were highly gratified yesterday afternoon in witnessing the first efforts of the new engine in the steam mill. The announcement that the engines would start at 3 o'clock drew as crowded a house as one of Jenny Lind's concerts could possibly have done. The effort was eminently successful, and gave entire satisfaction to all present. The engine is one of the very best we ever saw, and will puff that establishment in the most substantial manner. The new mill will be ready to work in three or four weeks, and when completed will be highly creditable to our enterprising town, but more especially so to the public spirit of its energetic proprietors.—*Cleveland Herald*."

Indiana.

Richmond and New Castle Railroad.—This important line of railway (says the Indiana State Journal,) is being prosecuted with great energy.—It runs through a rich and beautiful country—the Garden of Indiana. A great part of the road is in the hands of contractors. The contractors on that part between Richmond and Hagerstown—sixteen miles—are obliged to have their work ready for the iron by the first of next July, and those on that part between Hagerstown and New Castle—twelve miles—by next fall. The four principal towns on the route are Richmond, Washington, Hagerstown and New Castle—all thriving and business places. At Hagerstown, the present terminus of the Whitewater canal, the railway and canal intersect. The country through which the road passes is abundantly able to construct it, and there is no doubt that it will be done.

Central Indiana.

There is perhaps no part of the Mississippi valley more productive, than that of central Indiana. This section is especially adapted to the production of wheat, corn, cattle and hogs, and is being well cultivated, supplying a large surplus product for export, this surplus has until the present time found its way to a southern market, down the natural channels. It is however very evident, that there is soon to be a change in the direction of the surplus productions of this fertile region, highly beneficial to us, as well as to Indiana. The people there are directing their attention to our lakes, canals, and railroads, as channels through which their products are to find an eastern market, when our canals shall be enlarged, and our railways matured. The cost of transporting western produce, must be greatly reduced, and when the Indiana railways shall be constructed, connecting our lakes, canals, and railroads through the Ohio roads, with the capital of Indiana the cost of transportation by the northern route to the eastern sea boards, must be much less, than by the southern, or New Orleans route, independent of the risk from the

climate, through which it must pass on that route. If these views shall be realized, it requires no spirit of prophesy to foresee that the cheap and substantial railways of Ohio and Indiana when completed, in a continuous line, uniting the lake with the capital of Indiana, must do a large and profitable business.

Memphis and Charleston Railroad.

We briefly alluded in our last to Mr. Brinkley's having effected his mission for the purchase of iron for this road. The purchase was made at \$31 50 per ton. Eight thousand and five hundred tons have been bought, enough for the road from Memphis to Lagrange, and from Decatur to Tusculum. The iron is of the best quality of T rail, and was purchased of Mr. George Peabody, London. It is to be delivered at Lafayette, above New Orleans, in equal quantities, at the beginning of each month, from the first of December, until the whole shall be delivered. The duty on each ton—2240 lbs.—will be \$6 84, making the cost of the iron per ton \$38 34; and the entire cost at Lafayette \$325,890 00.

We learn from Mr. Davidson, the contractor for grading the road between this point and Lagrange, that operations have already been commenced on thirty-five miles, and he will in a few days have about three hundred hands at work. He expects to have the grading finished two months before the expiration of the term of his contract, by the 1st of August.

The cars for the road are to be built at Memphis. Forty freight cars have already been contracted for, to be built by Messrs. Kay, White, Curtiss and Knap. The Memphis Eagle states that W. C. Bradford, Esq., one of their enterprising citizens, is now at the north making the necessary examinations preparatory to deciding whether or not to establish a connection with his foundry, a shop for building locomotives.

Blue Ridge Tunnel.

The engineer of the Blue Ridge railroad writes us, contradicting the report that the work on the tunnel is to be abandoned on account of the hardness of the rock, or that there is any idea of doing so. He informs us "that, although the rock is of the hardest kind, being solid trap or greenstone with veins of flint, yet we progress at the rate of about one hundred feet per month from the two ends; it being impracticable to avail ourselves of shafts at the depth of 700 feet below the Blue Ridge mountain, especially through so hard materials. I can assure you that there is not, and has never been, any intention on the part of any one to abandon the work. The tunnel will be 4,260 feet long; we have penetrated, in the aggregate, 800 feet. We rise to it on the east side, for nearly fourteen miles, at the rate of 70 feet per mile, and descend on the west for three miles at the rate of nearly 70 feet; which is, besides the grade of the tunnel, towards the east. The work is very heavy on both sides."

Indianapolis and Sandusky.

The distance from Indianapolis to Sandusky, on Lake Erie, by the Bellefontaine line, will be 236 miles. There are now in use, over a heavy T rail, 143 miles of this line, leaving 93 miles to be completed next year by the Ohio and Indiana companies, 40 by the Indiana company, and 53 by the Ohio company. These 93 miles, we learn, will be ready for the superstructure and iron early in the spring. When this road shall be opened, our time from this city to the lake will be about nine hours,

and to New York about thirty-eight hours. This will give Indianapolis great advantages as to position, as a starting point for the East, and must give a new direction to our eastern travel and business.—*State Journal*.

American Railroad Journal.

Saturday, November 15, 1851.

Mr. Whitney's Railroad Project.

Mr. Asa Whitney delivered an address before the Geographical Society of New York on Saturday last upon his plan of a railroad to the Pacific. The address contained nothing new, and as we have laid the substance of it before our readers so many times when writing upon his project we deem it useless to repeat the old story. Mr. Whitney proclaimed his unshaken constancy to his plan, and expressed his determination to live and die for it. We confess we can see but little encouragement for him. We admire his perseverance, but his zeal for his own plan is the great obstacle to his success. He can look at nothing but this. He sees no difficulties in the way, because he knows comparatively nothing upon the subject to which he has committed himself—consequently cannot feel the propriety of availing himself of the experience of others. Those persons who have the most extensive acquaintance with any subject are always the most anxious to avail themselves of the experience of others. They best appreciate the obstacles to success in every enterprise, and are, consequently, those most anxious to possess themselves of what ever light others may have, where their own practice furnishes no precedent. Any other course but this is foolhardiness, not conduct. In Mr. Whitney's case we are tired with words, and now want something that is tangible and satisfying. Let him give less prominence to himself, if only for a brief hour; and, instead of his own, let us have the opinions of such men as Mr. Latrobe, or J. Edgar Thompson, or Mr. Kirkwood, or Mr. Garnet, or Mr. Morton, or Mr. Seymour, or some other eminent engineer, upon his plan, and let us hear what they say. Our people do not allow themselves to undertake the most trivial affair, where engineering is concerned, without consulting these men and being guided by their opinion: and what we consider to be necessary in small things, certainly is equally so in those of great magnitude. We will not depart from this wholesome rule, for Mr. Whitney nor any other schemer; and the sooner he understands this, the better all round. Mr. Whitney is a man of great enthusiasm and some inspiration, but these qualities alone cannot give us the grade necessary to ascend a mountain, nor calculate the quantity of excavation in a deep cut, nor the extreme limit to the strength of iron. All such matters must be vouched for by the proper persons, and we cannot take Mr. Whitney's word in the engineering matters connected with his project; and he will so find it. Let him come before the public with his scheme well certified by men whom we are accustomed to trust, and whose advice we follow, and we will be bound he shall have all that he asks. No one man is wiser than all others, but he is the wisest and the strongest, who adds to his own, the wisdom and experience of all others.

Louisville and Nashville Railroad.

We see by the Louisville papers, that the president of this road, L. L. Shreeve, Esq., and the chief engineer, L. L. Robinson, Esq., are now in Nashville upon business connected with the above work.

Pneumatic Pile Driving.

We learn that there is a strong probability, that the contract for the piers of a bridge over the Great Pedee river, in the line of the Wilmington and Manchester railroad, to be constructed upon the above principle, will be taken by a Northern house extensively engaged in the foundry business, and abundantly able to execute a contract of this kind. We hope to see the above mode of sinking the foundations of bridges resorted to in this country, as we are satisfied that it is in every respect much better and cheaper than the old mode of laying them by the use of coffer-dams.

Kentucky.

Harrodsburg and Frankfort Railroad.—The projectors of this road have determined to adopt the route to Frankfort. At a meeting recently held at Harrodsburg, one of the directors of the Louisville and Frankfort company offered in behalf of that company, to build the above road, provided a good subscription of \$500,000 could be raised—say \$400,000 by counties, and \$100,000 by private individuals—the company to receive the subscription and make the road, and admit the subscribers of the new stock as joint stockholders in the whole road, both main stem and branch.

The meeting resolved unanimously to recommend to the several counties represented, to raise, under the sanction of a vote of the people, and upon the credit of each county respectively, the following sums of money for the construction of the road, according to the proposition of the Louisville and Frankfort company: Mercer, \$200,000; Anderson, \$50,000; and Franklin, \$200,000; and recommended that the vote upon the proposition to raise the respective sums of money be taken in each county upon the first Tuesday of December next.

Stock and Money Market.

The favorable aspects noted in our last in reference to greater ease in the money market have not been confirmed, and money is nearly as tight as it has been at any time since the recent pressure commenced. We have commenced shipping specie in large amounts, which has had the tendency to depress stocks very rapidly, as will be seen by our quotations. There is a general feeling of distrust and uncertainty as to the future, and a belief that "times must be worse before they are better."

The grand cause of the present pressure is our foreign indebtedness. "The balance of trade" is against us, which compels us to use the basis of currency to pay it. We have, in another column, endeavored to show in what manner the balance of trade, when against us, affects our business operations. We beg leave to call the attention of the reader to the article referred to.

In the present state of the money market, it is worse than useless to attempt to sell bonds—the securities of new works cannot be sold at any reasonable rates. Our roads are now seriously feeling the results of over-trading, and many of them must check their operations unless money becomes more abundant.

Cleveland, Columbus and Cincinnati Railroad.—The receipts on this road for the month of September last, from passengers and freight, were 72,505 47 dollars.

New York and New Haven Railroad.—The receipts on this road continue to show the considerable improvement on the business of last year, which has been before noticed. The earnings were in October:

Passengers.....	\$53,688 47
Commutation.....	637 54
Freight.....	8,000 00

Total.....	\$62,326 01
Paid Harlem Road.....	4,326 51

Net receipts.....	\$57,999 50
October, 1850.....	44,785 07
October, 1849.....	34,377 74

The receipts show a gain of nearly 33 per cent.

Macon and Western Road.—The receipts of this road in October were..... \$21,732 62

October, 1850.....	20,108 99
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Increase.....	\$1,623 62
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The receipts for the week ending 2d of November were \$7,397, showing a very large business.

Delaware and Hudson Canal.—The amount of coal transported over the Delaware and Hudson canal during the week ending Nov. 8 1851, was. 31,230

Quantity previously received.....	664,805
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Total tons.....	696,035
Up to the same period in 1850.....	460,114

Increase this year.....	235,921
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The receipts of the Morris Canal Company were:—

Week ending 1st inst.....	\$3,529 34
Same week last year.....	2,622 75

Increase for October, 1851.....	\$906 59
Total to 1st November, 1851.....	\$96,282 09
do. do. 1850.....	75,006 85

Increase in 1851.....	\$21,265 24
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Ogdensburg Railroad.—The official statement of the earnings of this road for the month of October, is as follows:

Freight.....	\$29,526 08
Passengers.....	10,760 84
Rents.....	262 54

	\$40,549 46
In corresponding month of last year....	22,732 66

Gain this year, 78 per cent.....	\$17,817 40
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The Evening Journal gives the annexed statement of the quantity of flour, wheat, corn and barley, left at tide water during the 1st week in November in the years 1850 and 1851, as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850...152,990	228,296	43,941	78,875	
1851...154,080	251,145	206,620	183,155	

Inc. 1,090	22,849	Inc. 162,679	104,280
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The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 7th Nov., inclusive, during the years 1850 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850...2,401,852	2,468,940	3,143,678	1,408,072	
1851...2,885,204	2,678,423	7,295,069	1,216,245	

Inc. 483,352	209,483	4,152,381	dec.191,827
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The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 7th Nov., inclusive, during the years 1849 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1849....2,589,940	2,018,611	4,767,282	1,105,080	
1851....2,885,204	2,678,423	7,296,059	1,216,245	

Increase. 345,264	660,812	2,528,777	111,165
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By reducing the wheat to flour, the quantity of the latter left at tide water this year, compared with the corresponding period of last year, shows an increase of 525,240 bbls. of flour.

Increase, 20 per cent.....	\$1,584 84
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Erie income 7's	93
Hudson River 7's, 1853	101
Michigan Central, convertible, 8's, 1856	104
New York and New Haven	100
Norwich and Worcester, mortgage, 1860	80a85
Old Colony, 1854	97
Ogdensburg 7's, 1859	91
Portsmouth and Concord	80a85
Passumpsic 6's, 1859	94
Rutland 7's, 1863	90
Reading mortgage, 1860	78
" " 1870	70
Sullivan, mortgage 6's, 1855	75
Vermont Central 6's, 1852	90
" " 6's, 1856	85
Vermont and Massachusetts 6's, 1855	88

Peru Railroad.—The extension of this road from Noblesville north is progressing, and the engineer of the company, W. J. Holman, informs us that the grading of the remaining 50 miles, through to Peru, it is ascertained from the recent estimates, can be completed by five hundred hands in fifty days. The bills of sawing for the superstructure are all taken by the different mill proprietors along the line, and it is expected, by Messrs. Tomlinson & Stewart, undertakers, to have the White River bridge, at Noblesville, completed in time to commence at that point laying track as early as the first of May next.

California.

San Francisco and San Jose Railroad.—The new State of California, among her numerous other enterprises, has commenced the building of railroads. Her first important project of this kind is a road from San Jose to San Francisco, a distance of 51 miles. The charter for the road was obtained at the last session of the Legislature, and the company was organized on the 6th of September last, by the choice of the following gentlemen as directors, viz:—

Davis Divine, Esq., J. Alex. Forbes, Esq.,
Hon. E. O. Crosby, Dr. James C. Cobb,
Capt. W.D.M. Howard, Peter J. Davis, Esq.,
Daniel Murphy, Esq., P. Van Caneghan, Esq.,
Thos. O. Larkin, Esq., Sherman Day, Esq.,
Sam. J. Hensley, Esq., Joseph C. Palmer, Esq.,
Hon. Joseph C. Sram.

At a subsequent meeting of the directors the following officers were chosen, viz:—

President—Davis Divine, Esq., of San Jose.

Vice President—J. Alex. Forbes, Esq., of Santa Clara.

Secretary—Charles E. Allen, Esq., San Jose.

Chief Engineer—Wm. J. Lewis, Esq.

Asst. Engineer—T. Arrowsmith, Esq.

An Executive Committee, consisting of the President, and Messrs. Crosby, Van Caneghan, P. J. Davis and Day, were chosen at the same time.—Also a Finance Committee, consisting of Dr. J. C. Cobb, Joseph Aram and Capt. W. D. M. Howard. The commissioners to open books of subscription to the capital stock, are Capt. W. D. M. Howard, Joseph C. Palmer, Samuel J. Hensley, Dr. J. C. Cobb and Charles White.

Subscriptions to the amount of \$150,000 have been obtained, and sufficient paid in to defray the expenses of survey, etc. Two routes for the road have been partially surveyed, one running through the heart of the valley of Santa Clara, near the Bay of San Francisco, and the other on a higher level, near the foot of the Coast Range. Both routes are very eligible.

The following extract from an address issued last February shows the practicability of such a railroad, together with the statistics of business and travel then existing.

"The valley of San Clara, with its tributaries, contains about 900,000 acres of as fine tillage land as the agriculturalist need desire. This land has yielded one hundred fold increase of wheat, and has been equally prolific in other products. One of the committee on this address has raised 900 bushels of potatoes this year on one acre. We speak advisedly when we say that in two years, with the aid of a railroad, this valley will be able to supply San Francisco with all the produce she can use. Our teeming acres will pour forth a bounteous supply for our population when it shall have risen from 20,000 to 200,000 inhabitants.

"Even with the present population of the valley, a profitable business can be done on such a road. During the last seven months, the amount of passenger travel between this place and San Francisco has not been less than 10,500, at an average expense of \$16 each, making a total of \$168,000.—During the same time about 2,000,000 feet of lumber were brought to the Embarcadero, at an average cost of \$15 per thousand feet, amounting to \$30,000. To this must be added \$30,000 for other freight. In this enumeration we omit the immense quantities of hay, wood, bricks, potatoes, quicksilver, cattle, and other articles which have been transported to San Francisco by water or land. To this we must add the cost of carting to and from the Embarcadero. Some estimate may be formed of the enormous amount of this item of expense, by the fact that one firm, and that not one of the largest, has paid, during six months, over \$3,000. These facts justify the supposition that

the expense of transportation for the six months ending Dec. 31, 1850, has not been less than \$30,000.

English and American Iron.

The Philadelphia Ledger gives the following as the result of the experience of the Reading railroad company, in the use of American and foreign rails upon their road:—

The average yearly per centage of rails worn out on the road for the two years ending on the 1st of December, 1849, has been as follows:—

English 45 pound rail, 1 3-10 per cent per annum.
Do. 52 " " 1 4-10 " "
Do. 60 " " 6 3-10 " "

Phoenixville Pa.,

60 " " 7-10 " "

This statement, however, does not exactly indicate the relative value of the several kinds of iron mentioned. The 45 and 52 lbs. rail, are both on the light track; yet it is the 10 or 11 years' wear of the former which compares with the 7 and 8 years of the latter, and the 5 and 6 years of the 60 lbs. rail, which are compared with the average of the first three years wear of the Phoenixville American 60 lbs. rails; both of which latter patterns are on the loaded (coal) car track.

The following is given as the comparative wear of rails on the Reading railroad:

English, 4 1-10 per cent. per annum.

American, 1 4-10 " "

Difference in favor of the American, 2 7-10 per cent.; or otherwise stated, the cost of repairing these rails *per annum*, (considering the damaged iron taken out as worth half as much as the new iron put on the track) will be as follows:

Repairing Eng. iron per ton per yard, 82 cents.

Do. American, " " 28 "

Difference in favor of American rails, 54 cents.

North Carolina.

Wilmington and Manchester Railroad.—We gave last week a statement of the financial condition of this road. We have received the annual report, which presents the following general view of the condition of the company.

The road is now in excellent order to carry on its ordinary operations. It is well stocked with locomotives, passenger and freight cars, all in good condition. The steamboats are likewise in very good condition, with the exception of the Dudley, which will require repairs before the close of the year. There has been a large increase on receipts from railroad freights, showing that the expenditures in this department were judiciously made.

The road is being relaid with the heavy iron rail, and so far as it is finished, compares with the best roads in the country. The superiority of this rail over the old flat bar is acknowledged by all who pass over the road. During the past year a contract was made to embank as much of the truss work at Rockfish and Neuse river, as it was deemed safe to close up. The embankment on the south side of Rockfish is now nearly completed, and that on the north side in a state of forwardness, the contractors expecting to complete it by the middle of December.

The board have also contracted for an extension of the warehouse in Wilmington, the present warehouse being found to be too small to hold the goods offered for transportation.

They have also made a contract with the Washington and New Orleans Telegraph Company to put up posts for a line of telegraph wires, from the junction with the Petersburg railroad to Wilmington.

This work has been paid for in stock of the telegraph company, sixty-five shares at \$50 a share.

The receipts of the present year exceed those of last year by \$39,222 74, most of which increase is derived from the local business of the road, and it is to local business, in the opinion of the President, that the board must look for a steady and healthful support.

From the present good condition of the company, and their flattering prospects for the future, the board have felt warranted in declaring a dividend of profits of three dollars on the share to stockholders.

For the American Railroad Journal.

H. V. POOR, Esq.

DEAR SIR:—In your valuable paper of Nov. 1st I noticed an article relative to the "Ohio and Indiana" railroad, copied from the Fort Wayne Times, the editor having been furnished with the facts by J. R. Straughan, Esq., the Chief Engineer. I desire to call attention to the following paragraphs which occur in that article.

"At Crestline, twelve miles east of Bucyrus, a point on the Cleveland and Columbus railroad, about three miles north of Galion, the Ohio and Pennsylvania road terminates, and then begins the Ohio and Indiana road which runs to Fort Wayne, 131½ miles long."

"This is the third link in the great chain of railroads from Philadelphia to the Upper Mississippi, and is the *only legitimate extension* of the eastern road at Crestline, as the Bellefontaine and Indianapolis road comes to Galion, and *does not connect*; thus giving the Fort Wayne road the sole advantage of this connection, although the Ohio and Pennsylvania company has located its road three miles farther south than a direct line, which they could have preferred in order to accommodate the Bellefontaine company."

The particular point to which I wish to refer is, the impression intended to be conveyed by these paragraphs, viz:—that the Ohio and Indiana road is the *only legitimate* western continuation of the Ohio and Pennsylvania railroad, and that the Bellefontaine and Indiana road "does not connect," and therefore is not to be regarded as a western continuation of the Ohio and Pennsylvania road. This by no means corresponds with the view hitherto held out to the public by the Ohio and Pennsylvania company. In their second annual report, published in January, 1850, occur these words.

"At the contemplated terminus of your road, and where it will intersect the Columbus and Cleveland road, the directors of the Bellefontaine and Indiana railroad, now being located, intend to commence their road, which connects with the Indianapolis and Bellefontaine railroad, now under rapid continuation, to the flourishing capital of Indiana, and thence to Terre Haute on the western border of the State, forming one *continuous central railroad* from the Delaware to the Wabash, appropriating to itself the business of all the roads constructed and in progress from the Ohio to the Lakes."

And in the third annual report, published in January, 1851, the annexed paragraphs will be found "as the second link in the great central chain of railroads, from Philadelphia to St. Louis, by the way of Indianapolis, our road occupies a highly important position; and the companies comprising the chain, have aided each other, by mutual efforts, to draw public attention to the vast consequences

which will flow from bringing together the several links of this grand communication, which is now advancing to a speedy and successful consummation."

"The whole length of the Ohio and Pennsylvania railroad will be 185 miles from Pittsburgh to its point of intersection with the Cleveland, Columbus, and Cincinnati railroad at *Crestline near Galion*. On the map accompanying this report, *Crestline* (a proposed new town) and *Galion* are represented as almost in contact; and in the skeleton map of Ohio, published by J. R. Straughan Esq., resident Engineer, and approved by S. W. Roberts, Esq., Chief Engineer of the Ohio and Pennsylvania railroad company, the terminus of the Ohio and Pennsylvania is shewn at *Galion*.

I can find nothing in any of the reports of the Ohio and Pennsylvania company, calculated to create the impression that the Bellefontaine and Indiana railroad is not the direct continuing link in the great chain leading to Indianapolis, etc.

Are the stockholders of the Ohio and Pennsylvania company prepared to endorse the statement that the Bellefontaine and Indiana railroad is *not* the legitimate extension of the great chain so often adverted to, and in such glowing terms?

Galion was the point of junction first designated by the Ohio and Pennsylvania company. In January, 1850, the Ohio and Indiana railroad company did not exist. The Bellefontaine and Indiana company located their road to *Galion* before any location had been made on the Ohio and Pennsylvania railroad west of Mansfield, and the Ohio and Pennsylvania company, (apparently attaching more importance to the northwest connection towards Chicago, than to the great central line towards Indianapolis,) afterwards located their line to a point on the Cleveland and Columbus railroad, 4 miles from *Galion*. Should it be constructed on the route as now located, it will involve the necessity of making 4 miles of connecting track, or, using 4 miles of the Cleveland and Columbus railroad, which latter alternative would of course be attended with decisive disadvantages to the Ohio and Pennsylvania company, and operate directly in favor of the route towards Cleveland and New York and Boston instead of the route through Pittsburg and Philadelphia.

If the Bellefontaine and Indiana road is to be regarded as the principal continuation of the Ohio and Pennsylvania line, the connection should be made with that view. If the Ohio and Indiana line is to be considered its main extension, the location viewed in that light, is now right. It is for the Ohio and Pennsylvania railroad company to decide, though the stockholders in the Pennsylvania railroad company are also interested in the operation.

Canada.

Quebec and Richmond Railroad.—The city council of Quebec has passed the ordinance granting a loan of £100,000 in aid of the Quebec and Richmond railroad, by which a communication will be formed between that city and the Atlantic and St. Lawrence railroad, at a distance of about 70 miles from Montreal. It was stated a short time since that a contract had been made for the grading of this road, to be commenced this autumn, subject only to the contingency of this loan being granted. The Montreal Gazette says that the business which has been done by the St. Lawrence and Atlantic railroad since it was opened to Richmond, has been twice as much as its most sanguine friends had anticipated.

Influence of Artificial Means of Communication upon Commerce.

So long as natural water courses were used, as the cheapest and most expeditious routes for the transportation of property, large towns were of necessity located upon navigable rivers, or so situated as to be accessible by shipping from the ocean. Towns grow up upon the most convenient location for the depot of the produce of the inhabitants of a particular section of country, and from which they can most readily procure their supplies of foreign merchandise; and as the primitive mode of transportation was by water, so far as this can be made available, all large cities are almost invariably so situated, as to enjoy this mode of transportation.

But a new element is at work in the science of locomotion, which is completely overriding the laws which gave birth to, and located our older cities. Rivers were formerly used as routes of internal commerce, by reason of superior economy to any other mode. If we can supersede rivers by routes still cheaper, and more expeditious, new cities must spring up on the new lines of intercommunication, and those which rely solely upon their old avenues, must inevitably retrograde, if not entirely sink into insignificance.

As short as has been the time since the introduction of railroads, our own experience is full of illustrations of the truth of the above remarks.—Those of our cities which led off in the construction of these works received a new impulse, and shot rapidly ahead of all their neighbors and rivals. The effect was soon seen, and the cause admitted by all. Nearly every town in this country of any considerable importance, or that aspires to become so, has been forced to construct, or to commence the construction of, railroads, as the only means of protecting its trade from the encroachments of their more enterprising rivals, who led off in this new movement.

The northern States, from their greater wealth and dense population, first commenced the construction of railroads, and for the same reason still maintain their superiority. The roads from the leading northern cities have now reached distant sections of the country, and we begin to see illustrations on a larger scale of what was before confined within a much smaller sphere. While railroads were in their infancy, their influence was confined within the narrow limits of a few miles, and was seen in the growth or decadence of rival villages and towns. With the wider extension of the system, though but yet very imperfectly developed, we see them begin to exert their influence upon cities thousands of miles apart, in addition to the already overflowing business of some, and in threatening to sap the very foundation of the prosperity of others.

These general views are strikingly confirmed by comparing the present condition of New York and New Orleans. The latter is situated at the mouth of a river, having, with its branches, more miles of navigable water than any other in the world, and draining the largest and most fertile valley on the globe. For this great valley, the Mississippi is the only natural outlet, and the city of New Orleans has been the only depot of its immense products. So favorable is the position of New Orleans for commercial greatness, that should any person be called upon to point out on a map of the world, the site where should grow up the greatest city, he would certainly select that occupied by New Orleans—so superior are the advantages in her favor over all others.

How is it, on the other hand, with New York? She, to be sure, possesses one of the most magnificent and convenient harbors to be found in the world, and the majestic Hudson, which, though hardly excelled by any other river in the excellence of its navigation, and the splendor of its scenery, brings her in contact with a very small extent of country. With all the advantages which we have named, the trade of New York was confined to a small territory, watered by the Hudson. She was even cut off from nearly all connection with distant parts of our own State, from the almost impassable condition of our common roads. The west to her was a *terra incognita*, so long as her trade was limited to the narrow belt of country bordering the Hudson. She occupied, both as regarded her population and commerce, a secondary position in the rank of American cities. Philadelphia was regarded, at home and abroad, as a much more important town, and was in possession of the greater part of the trade of the country, and the entire trade of the west, which is now regarded as the true source of wealth and prosperity by all our Atlantic cities.

New York showed nothing more than the ordinary growth of a town, keeping pace only with the growth of the surrounding country, until the opening of the Erie canal. This work was built at a time when water carriage was believed to be superior to every mode, as it was, to every known one. The effect which followed the opening of this great work was immediate and decisive. The trade which formerly went to Philadelphia, over the ordinary wagon roads, was immediately turned into new channels, and from that time New York shot ahead of all her rivals, and soon left them far behind in the race for commercial supremacy. She has ever since steadily enlarged the sphere of her influence, until she has nearly driven all her rivals out of the most coveted field, the west, and is now in the almost exclusive possession of that portion of it bordering upon the great lakes, and is rapidly attracting to herself that portion of it which has been accustomed to use the Mississippi as their outlet to a market, and to receive through New Orleans their supplies of foreign merchandise.

The Erie canal opened a water line from New York to the great lakes. These virtually carried that great work a thousand miles further west, to Chicago. To avail themselves of this new route, the people of Ohio, Indiana and Illinois* have constructed four extensive lines of canal, from different points on the lakes, to the navigable waters of the great valley, the Ohio and the Illinois rivers. The Erie canal being the cheapest outlet for these States, and the different works of which we have spoken, gave the inhabitants of almost every portion of the State we have named, a comparatively cheap and expeditious outlet to the seaboard. The immense trade immediately thrown upon the Erie canal, enabled our people to steadily reduce the tolls, till these at last reached a figure far below what was once believed to be possible. The effect of the low rates was to attract an increased business, which promoted still more the rapid growth of our city; thus adding at the same time to its value as a market for the produce of the west.

It never entered into the heads of the projectors of this work, that a different direction could be given to the commerce of the Mississippi river, nor had this idea been seriously entertained by any one,

* Her canal is nearly completed to the Ohio river.

till within a comparatively recent period. The fact had to be *proved*, before the idea could gain any credence. New York has now entered the lists with a new rival. She is now disputing with New Orleans the supremacy for the trade of the Mississippi valley, and success thus far has been as marked, and the corresponding effect upon her rival is as palpably visible, as they were in our contest with Baltimore and Philadelphia. Already has New York struck a decisive blow at the business of New Orleans, which is rapidly being reduced, by the loss of the trade of the upper portions of the great valley, which is being drawn through the channels of which we have spoken, to New York.

The result already produced is most marked, and has caused a corresponding consternation and dismay among the people of New Orleans. They feel and acknowledge the inroad already made upon their trade, and they are endeavoring to arouse themselves to some effort to ward off the danger which threatens such disastrous consequences.

The results which have thus far been accomplished, have been effected entirely through the medium of the New York and the western canals. The Ohio canals gave us the trade of that State. The Wabash canal has exerted the same effect in Indiana, as fast as its different divisions have been opened. The completion of the Illinois canal has produced the same result there, and has extended the sphere of our influence to the Mississippi. On this account, the Illinois canal may perhaps be regarded as of more importance to this city than either those of Ohio or Indiana. The effects that followed the opening of these was, in a measure, confined to the immediate section of country traversed by them, but the Illinois canal carries us to the very centre of the great valley, and taps the grand artery through which has flown its life's blood, which has built up and sustained the cities and towns upon its banks. The Illinois canal is rapidly changing the course of trade in the west. Through this route, the whole Lake region receives its supplies of sugar, molasses, hemp, and all the products of the Southern States consumed at the north; and on the other hand, northern and eastern manufactures and foreign merchandize takes the same route to the southern and western consumer. The Illinois river is well known to be one of the best for navigation in the United States, and this river in connection with the canal brings New York into direct intercourse with a very large section of country that formerly used the Mississippi as the only means of procuring their foreign supplies, and sending their produce to a market. A merchant at Quincy, or at Peoria for instance, instead of going to St. Louis or New Orleans for his goods, comes directly to New York and purchases at first hand and saves the commission formerly paid to the western jobber. The course of trade instead of being parallel with the river is now at right angles to it. The tendency of this will be to divide it among a larger number of smaller towns instead of concentrating it at a few points.

If the results which we have stated have been brought about through the agency of canals, how much more emphatic will be the change when the railroad shall have superseded the canals, and when the numerous lines, now in progress shall reach the Mississippi. At least six lines of railroads, are in progress, which, will strike that river between the mouth of the Wisconsin and the Ohio, three of them based upon Lake Michigan.

These at the several places, at which they touch

the Mississippi, will intercept the trade arriving at such points, and transport it direct to eastern markets. These roads all coincide with the natural direction of trade in the west, while the Mississippi for most articles is at right angles to it, and it is not difficult to see that trade will in the end follow its appropriate routes.

If the views we have expressed are correct, it certainly becomes the leading to cities on the Mississippi, New Orleans and St. Louis for instance, to make use of all the means in their power to maintain their trade against the encroachments of New York. The longer this is delayed the greater will be the difficulty of meeting them. New Orleans in particular must now act with promptness and energy or her culminating point will soon be passed.

Cincinnati and Mississippi Railroad.

Great satisfaction is expressed by the people of St. Louis and Cincinnati at prospect of the early completion of this extensive line of railroad, which has been recently placed under contract to a New York company, headed by Mr. Seymour. The whole road will be about 330 miles long. The iron alone at \$45 per ton, delivered, will cost about \$15,000.

Should the Illinois division of this road be vigorously pushed, it can be completed in less than two years. Such we presume will be the case, as the work can, with equal convenience be commenced at both ends, at the same time. Should the Evansville railroad be extended to Terre Haute within the same time, a railroad route will be opened to St. Louis much sooner than has been anticipated. In about one year from this time the Great Western line will have reached Terre Haute, and until a direct line from that place, shall be carried across the States, travel will take the route indicated. We have no doubt that in less than two years the road between Vincennes (a point on the Cincinnati road) and Terre Haute will be constructed, while we see but little prospect of the early opening of a road in Terre Haute, Alton or St. Louis, Missouri.

Iron by way of the Lakes.

If any one is desirous of seeing a lively state of things, says the Sandusky Commercial Register, let him take a stroll up town and see the landing of railway iron on Sheldon's dock. The following vessels are now unloading: New Haven, Paragon, Albatross, Westchester, Monsoon, Palestine and Niagara. The Florence and Castalia are in the bay.

We learn that before the arrival of the above vessels, there were about 10,000 bars on the dock, and when they have discharged their cargoes, there will be from 16,000 to 20,000. Besides these, there are three or four vessels on their way up, laden with iron. It is sent up the road as fast as possible. The iron is principally for the Mad River road, and the balance for the Cincinnati, Hamilton and Dayton, and the Cincinnati and Hillsborough roads.

Railroad Iron.

THE undersigned offer for sale 1000 tons Railroad Iron, (about 56 lbs. to the yard,) now at Brooklyn.

CHOUTEAU, MERLE & SANFORD,
Oct. 1, 1851. 51 New st.

M. B. Hewson, Civil Engineer,
(Open to a New Engagement.)
Memphis, Tenn.

To Railroad Companies. H. & F. BLANDY, Proprietors LOCOMOTIVE ENGINE WORKS, ZANESVILLE, OHIO.

RESPECTFULLY give notice to Railroad Companies that they are now prepared to furnish Engines of the most approved construction and finish, which, for capacity, speed and durability, are not excelled in this country.

Also, all other Railroad machinery, of both wrought and cast iron, pertaining to the road, stations or machine shops.

Terms as favorable as any other builders in the United States.

The facilities for transportation from Zanesville are as good as from any other point in the Union, having steamboat navigation to the Ohio river, and Canal boat and Railroad connection with the Ohio river and Lakes.

One of their Engines, the "MUSKINGUM," on the Central Ohio Railroad, may be referred to, or others, at their works. The attention of those interested is invited, and orders solicited.

Oct. 30th, 1851.

Notice to Contractors.

ENGINEER'S OFFICE, CIRCLEVILLE, }
October, 29, 1851. }

SEALED PROPOSALS will be received by the undersigned, at the Office of the Cincinnati, Wilmington and Zanesville Railroad Co., in this place, until 5 o'clock, P. M., of Monday, the 17th of November next, for the clearing, grubbing, grading, bridging and masonry of all that portion of said road lying between the towns of Morrow, in Warren county, and Lancaster in Fairfield county, a distance of 89 miles.

Bids, including with the above the ballasting, furnishing and laying down the ties, and laying the track of said road, will also be considered.

Bills specifying a per centage of stock and county bonds, or both, to be received in payment, are also invited.

The maps, plans, profiles and the line itself are now ready for examination. The work submitted comprises a large amount of good work, and the attention of contractors generally is solicited.

By order of the board,

TRACY McCracken,
Chief Engineer C. & Z. R. R. Co.

To Contractors.

OFFICE OF THE E. AND ILL. R. R. Co., }
Evansville, Oct. 23d, 1851. }

SEALED PROPOSALS will be received at this office from the 13th to the 23d day of December next, for the grubbing, grading and bridging of that portion of the Evansville and Illinois railroad, lying between Princeton and Vincennes, a distance of 24 miles.

This work includes two bridges; one across White River, about 600 feet, the other across Patoka, about 200 feet.

Contractors will state what proportion of the Stock of the Company will be taken in payment.

Plans, profiles and specifications, will be exhibited, and all requisite information given at the Office of the company in Evansville, on and after the 13th day of December next. By order of the Board of Directors.

SAM'L. HALL,
President.

RAILROAD SPRINGS.

Fuller's India-rubber Springs.

THESE are now made in our own Factory, of the best materials. Each spring is guaranteed to perform the required work. Purchasers guaranteed against adverse claims.

Car Builders will save great expense by calling at the office of the Company.

23 Courtlandt St., New York.

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address

J. B. GRAY, Philadelphia.

July 10, 1851.

4m

To Stone Masons.

THE NEW ALBANY AND SALEM RAILROAD Company have about 10,000 c. yards of Abutment Masonry to let at private contract, to be completed by the 1st of July, 1852.

To contractors who can produce testimonials of character for ability as **STONE MASONS**, fair, remunerating prices will be given.

Early applicants, by securing the work now offered, will gain advantages over competitors for the erection of an additional 15,000 yards, to be let out early next spring, in bridging the streams between Bedford and Michigan City, via Bloomington, Gosport, Crawfordsville and Lafayette, (the most productive and healthy region in Indiana,) by the knowledge they will have acquired of the resources of the country.

Application may be made in person, or by letter addressed to the undersigned, at New Albany, Indiana.

S. B. WILSON, Engineer.
Engineer's Office, New Albany,
Sept. 29th, 1851.

Engine Waste.

CLEAN WASTE for Locomotive and Steam-boat Engines, in lots as wanted; also, superior Steam Packing. Orders, with explicit directions for forwarding, should be addressed to

J. MORTIMER HALL,
36 South st., New York.

November 1. 3m

Notice to Contractors.

Atlantic and St. Lawrence Railroad.

THE Sixth and last Division of the Atlantic and St. Lawrence railroad will be placed under contract on the 10th day of November next, and proposals will be received until that date by the subscribers, at Sargeant's Tavern in the town of Northumberland, N. H.

Plans and profiles will be in readiness for examination at the Engineer's Office in Northumberland, on and after the 1st of November.

This Division extends from the Connecticut River in the town of Stratford, N. H., to the boundary line of Canada, a distance of about forty miles.

No Spirituous Liquors will be allowed on the work, and bids of contractors who have heretofore failed to pay their laborers, on this, or any other work, will not be considered.

Cash payments will be made monthly, reserving ten per cent. until the final completion of the contract.

JOHN M. WOOD & CO.

October 14th, 1851.

To Contractors.

OFFICE WILMINGTON & MANCHESTER R. R. Co.,
Marion C. H. S. C., October 18, 1851.

SEALED PROPOSALS will be received until the 15th of December next, for the Piers of a Bridge across the Great Pee Dee River. The job comprises four piers, one a very heavy pier for a draw, and the sinking of cast iron hollow piles by "Dr. Pott's Pneumatic Process," for forming foundations. The plans and specifications of the piers will be exhibited by the Secretary of the Company at Marion Court House, and by the Resident Engineer, L. J. Fleming, Esq., at Wilmington, North Carolina.

WALTER GWYNN,

Chief Engineer Wilm. and Man. R.R.

November 1. Richmond, Va.

Best Cast Steel Axles & Tires,
(A NEW ARTICLE.)

For Railroad Carriages and Locomotives.

THE quality of this Steel is sufficiently attested in the announcement that it has carried off the first prizes awarded at the World's competition of 1851, in London. The axles are in general use on the Continent, and are now offered in competition with any other that can be produced; and to be tested in any way that may be desired by the Engineers of the United States, either by impact or by torsion. This Steel is manufactured by Fried Krupp, Esq., of Essen, in Renish Prussia, represented in the United States by

THOS. PROSSER & SON,
28 Platt st., New York.

November 1.

Railroad Iron.

THE undersigned are prepared to enter into contracts now at specific prices, to deliver Railroad Iron during the coming Winter and Spring, free on board at the shipping ports in Wales, or at ports in the United States.

CHOUTEAU, MERLE & SANFORD,
Sept. 30, 1851. No. 51 New st.

Notice to Bridge Builders.

PROPOSALS will be received at the Engineer's Office at Charlottesville, Va., on the 14th of November, for the construction of a bridge over Mechum's river, on the Virginia Central Railroad. The length of the Bridge will be 350 feet, in three spans. Height of Bridge above the river 70 feet. Bids will be received on Howe's plan and Town's lattice. The work to be finished by the first of July, 1852, but the timber to be procured at once. Plans and specifications will be ready to be exhibited on the 28th inst.

T. GOLDEN RUGGLES,

Civil Engineer Va. Central R. R.

Charlottesville, Oct. 11, 1851.

N. B.—Good timber may be procured in the vicinity of the line of the road, which will be in operation to a point 3 miles from the bridge.

**SIX HUNDRED THOUSAND DOLLARS
NORTHERN INDIANA RAILROAD 7 PER
CENT MORTGAGE BONDS.**

The Northern Indiana railroad company offer for sale \$600,000 of their 7 per cent. mortgage bonds with interest coupons annexed.

They are in sums of \$1,000 each, payable August the 1st, 1861, with interest at 7 per cent. semi-annually on the 1st of February and 1st of August, payable at the Mechanics' Bank in this city, where the principal is also payable, and are secured by a mortgage to Shepherd Knapp, Esq., of New York, in trust for the bondholders.

They are issued under acts of the Legislature of Indiana, authorising their issue and the mortgage as above, to secure the same. The amount of bonds to be thus issued under the mortgage, is limited to One Million of dollars, \$400,000 of which have been disposed of, and \$600,000 are now offered for sale.

The mortgage covers the whole road of the company in Indiana, and is the first and only lien thereon.

This embraces the entire line from its connection at the State line of Michigan with the Michigan Southern road (of which it is an extension) through Elkhart, Mishawaka, South Bend, and Laporte, to the boundary of Illinois, about 100 miles: a line to and from Michigan city of about 25 miles, connecting with the same, and a line of 10 miles from Elkhart to Goshen—making in all about 135 miles of road.

The company hold also, by lease and contract, a line from the western boundary of Indiana to Chicago, of about 13 miles.

By an existing contract between this company and the Michigan Southern company, a continuous line of railroads is formed from the head of Lake Erie, at Monroe and Toledo, in a very direct course through Southern Michigan and Northern Indiana to Chicago—a distance from Monroe of 246 miles, and from Toledo of 243—all to be under one superintendence and management, and for all practical purposes forming one joint interest.

At Chicago this line of road connects with the "Chicago and Rock Island road," to be extended to the Mississippi river, at Rock Island, 180 miles long, and which is under contract.

Also, with the Chicago and Galena railroad, about 84 miles of which is now about completed and in use, the entire line of which, it is expected will be completed to the Mississippi river in all next year.

Also, with the Illinois Central railroad, to run from Cairo, at the mouth of the Ohio river, to Chicago.

At Toledo it unites with the great chain of railroads along the shore of Lake Erie to Cleveland, Dunkirk and Buffalo. This whole south shore line will probably be completed in the course of the next season, and parts of it will be opened for use the present year.

The whole line of roads of this company is under contract; the grading and bridging on 60 miles are completed, and the rails laid on 50 miles of it. The iron has been purchased for the whole road from the boundary of Michigan to Chicago, and most of it is delivered on the line ready for use. The road is finished 30 miles to South Bend, to which point the cars are now running from Monroe and Toledo, and the work of laying down the rails is in active progress upon the residue of the line. The main line from the East to Laporte (some 56 miles) will be opened next month, and the whole road from Lake Erie to Chicago, in March next, when the journey from Lake Erie to Chicago, may easily be made in 8 hours.

The means for the construction and equipment of the Northern Indiana road are provided by stock and bonds.

Nearly one million of dollars are subscribed to the stock, about \$850,000 of which is taken in New York and the Eastern States, the remainder along the line of the road. An average of 50 per cent. has been paid on these subscriptions, and the residue is being regularly paid at the call of the company.

For providing the remaining means required to complete the work, the company have issued their Mortgage Bonds to the amount of one million of dollars in all, as above stated, proceeds of most of which are wanted to pay for iron rails, machinery, &c.

The mortgage empowers the trustee, in case of failure to pay either interest or principal, to take possession of the road, with its equipments, and receive its earnings, or to sell the same, on due notice, and apply the proceeds in payment.

That this road will prove one of great usefulness and profit will at once be seen by reference to a map of its line and connections, being an essential link in the great chain of railways from the city of New York to the Mississippi river along the southern extremity of the two great Lakes, traversing as it does one of the most productive agricultural regions in the United States, while its cost per mile will be less than one-half the usual cost of railroads of the same class in the Eastern States. As a local road alone, giving an outlet to the productive region it traverses, it is confidently believed that it will pay a large profit upon its cost without reference to its connections.

The proof of this is found in the earnings of the Michigan Southern railroad for the past five months which, until its connections are formed is to be regarded as a local road, and is of about equal length with the Northern Indiana road, and traverses a country not more productive, viz:—

For May, 1851, \$24,427	For August, 1851, 24,196
For June, do. 22,511	For September, do. 35,217
For July, do. 20,603	

Total \$126,954
It will be thus seen that the security offered is of the highest character.

Sealed proposals will be received for any amount not less than \$1,000, until the 12th day of November next, at 3 o'clock P. M.

Proposals may be addressed to WINSLOW, LANIER & CO., No. 52 Wall-street, or E. C. LITCHFIELD, Treasurer of the Company, No. 47 Beaver-st., indorsed "Proposals for Northern Indiana Railroad Bonds."

Twenty-five per cent. of the purchase money will be required to be paid immediately upon acceptance of the bids; and the remainder in equal payments on the 25th of November and the 10th of December next. Any purchaser will be at liberty to pay in full at once, and interest upon the bonds will run from date of payment.

Three hundred thousand dollars (one-half the amount now offered) will be disposed of absolutely and without reserve, to the highest bidders.

The company reserve the right to withdraw the remainder, if the offers are not satisfactory.

All necessary information in relation to the bonds together with maps, may be obtained by the calling on Winslow Lanier & Co., or E. C. Litchfield, at either of which places copies of the bonds and mortgage may be had.

GEORGE BLISS JOHN STRYKER.
EDWIN C. LITCHFIELD, CALVIN BURR,
HUGH WHITE, Committee of the Directory,
New York, Oct. 20, 1851.

Bridges & Brother, DEALERS IN RAILROAD AND CAR FINDINGS,

64 Courtlandt street, New York.

Having established a general Depot for the sale of articles used in the construction of Railroads, Locomotive Engines and Railroad Cars, we would invite your attention to our establishment. We have already in store a good assortment of CAR FINDINGS and other articles used in the trade, and feel justified in saying, that should you desire anything in our line, we can supply on terms perfectly satisfactory, and in the event of your desiring to order, you may feel assured that your terms will be as good as though you were here to make your own purchases.

Among our goods may be found Railroad Car Wheels, Axles, Jaws and Boxes, Nuts and Washers, Bolts, Brass Seat Hooks and Rivets, Window and Blind Springs, Lifters and Catchers, Door Locks, Knobs and Butts, Ventilators and Rings, Car Lamps, Coach and Wood Screws, Jack and Bed Screws and Babbitt's Metal; also Plushes, Damask, Enameled Head Linings, Cotton Duck for Top Covering in width sufficient without seams, Curled Hair and all other articles appertaining to cars.

Also a new and valuable CAR DOOR LOCK, well adapted to the Sliding Door. This is decidedly the best yet introduced.

LOCOMOTIVE ENGINE LANTERNS, the best article made in the country. Whistles, Gauge and Oil Cocks, Hemp Packing, American, Russian and Italian. We are also agents for Lightner's Patent Journal Box for Car Axles, that invaluable invention, for the economical use and preservation of Car Journals.

Coach VARNISH and Japan of the best quality.

We would also offer our services for the purchase as well as for the sale of goods on commission.—Both members of our firm have had the experience of many years in the manufacture of Railroad Cars, and our Senior was a member of the well known house of DAVENPORT & BRIDGES, Car Manufacturers, Cambridgeport, Mass. With our knowledge of matters pertaining to Railroads, we feel quite confident in giving satisfaction to both buyer and seller, and hope that through assiduity and attention to any business entrusted to our care we shall merit a continuance of confidence and patronage.

BRIDGES & BROTHER.

July 22, 1851.

Lightner's Patent Axle Boxes.

THE Undersigned are Agents for, and offer for sale, *Lightner's Patent Axle Boxes*, for Railroad Cars and Tenders, which have, by thorough experience, been demonstrated to be one of the most valuable improvements ever introduced in Locomotion. The saving effected in oil alone, will in a few months pay the first cost of these boxes, independent of other advantages. They are now in use upon the following, among other roads, viz:

Boston and Worcester, Boston and Providence, Boston and Fitchburg, Nashua and Lowell, Providence and Worcester, Northern, N.H., Cheshire, Manchester and Lawrence, Concord, N.H., Concord and Claremont, Ogdensburg, (Northern, N.Y.) Stonington, New London Willimantic and Palmer, New Jersey Central, New Hampshire Central, Worcester and Nashua, Fitchburg and Worcester, Connecticut and Passumpsic, Lowell and Lawrence, Salem and Lowell, Wilton Branch, Newburyport.

Below will be found the certificates of a number of gentlemen, whose opinions will be good authority in every part of the country.

Office Boston and Prov. R. R., }
Boston, Dec. 28, 1849. }

Mr. JOHN LIGHTNER,

Sir,—It affords me pleasure to say, that after two years' trial of your boxes, I am fully and entirely satisfied of their superiority over any other pattern we have used. This superiority consists in economy of oil and freedom from "heating." I have tried every pattern of box in use, of any note, and do not hesitate to say, that you have devised one which in every respect combines greater advantages than any other within my knowledge; these advantages are so manifest, that I am fitting up all

our cars with your boxes, as fast as practicable.

Annexed, is a statement of an experiment with your boxes, the result of which may be of use to your interests.

Ten passenger cars, running 72 wheels, fitted up with Lightner's boxes used 41½ pints of Patent Oil, at 50 cts. per gallon, ran 43,099 miles, equal to 5-18 pints per wheel for 43,099 miles. Speed, 30 to 40 miles per hour.

Very respectfully yours,

W. RAYMOND LEE, Supt.

I have examined the above statement of Mr. Lee, and fully concur with him in his opinion of the superiority of Lightner's box.

GEORGE S. GRIGGS,

Supt. Machine Shop B. & P. R. R.

Boston, July 26, 1849.

This is to certify that J. Lightner's axle boxes for railroad cars and locomotive tenders, have been in use on the Boston and Worcester railroad one year, and I unhesitatingly pronounce it, in my opinion, the best and most economical one in use, requiring less oil, of easy application, not susceptible of derangement, as in most kinds in use. When requiring repairs or renewal, the same may be done in one-fourth of the time usually occupied for that purpose. The box requires oiling not oftener than once a month—is kept quite free from dust, and consequently wears much longer than those generally in use.

D. N. PICKERING,

Supt. Motive Power, B. & W. R. R.

Office of Boston Locomotive Works, }
December 12th, 1849. }

The Boston Locomotive Company have been using J. Lightner's patent axle boxes under the tenders of their engines for several months, and find them more highly spoken of by the railroad companies that have used them in regard to economy in the use of oil, their durability and their ease of adjustment, than any other boxes which they have used. We therefore do not hesitate to recommend them to all railroad companies.

DANIEL F. CHILD,

Treas. Boston Locomotive Works.

Taunton Locomotive Works, }

Taunton, July 7, 1849. }

Mr. H. F. ALEXANDER,

Dear Sir,—Your favor of yesterday came to hand in which you ask what success we have met with, in using Mr. Lightner's patent box for cars, engines, &c.

We have put it in use on the Boston and Providence railroad, New Bedford and Taunton Branch railroad, Central railroad, N. J., Norfolk County, Rutland and Burlington, and as yet we have not had one complaint from them; and from what we have used of it, and witnessed, we do not hesitate to say that it is superior to anything in use for that purpose. It is simple in its construction, and easy of access, and the reservoir is held close to the shaft, and the oil and journal is perfectly secure from dust; they will run from four to six weeks without replenishing the oil. The brass in the box is changed very much easier than by any other plan that we have seen.

Very resp. yours,

W. W. FAIRBANKS, Agent.

Office Providence & Worcester R. R. Co., }
Providence, Dec. 17th, 1850. }

H. F. ALEXANDER, Esq.,

Sir,—The "Lightner patent boxes" for cars and locomotives have been in use under a portion of the passenger cars and engines of this company for upwards of two years, and have given very great satisfaction.

Though combining many excellent qualities, their great superiority consists in the economy of oil.

The result of experiments upon this road shows the consumption of oil by the use of this box, to be not more than one sixth part the quantity consumed by the use of the common box.

With the common box, eight passenger cars, 64 wheels, running 90 miles per day, consumed in 12 months 520 gallons of oil, being an average of 8½ gallon per wheel per annum.

With the Lightner box the same cars running the same number of miles per day, during the same space of time consumed 73½ gallons of oil, being an average of 1½ gallon per wheel per annum.

So manifest are its advantages over any other box used by this company, it is intended to place it under all our cars as soon as practicable.

Besides the saving of oil, as they afford complete security from dust, we think them more durable than any other box in use.

Another advantage resulting from the use of this box is, cars run more easier than with the common box. The saving in fuel which it would effect, would of itself, we think be a sufficient inducement to use this box in preference to any other known to us.

Very respectfully,

ISAAC H. SOUTHWICK, Supt.

JOHN B. WINSLOW,

Supt. Machine Shop, P. & W. R. R.

Cambridgeport, April 5th, 1851.

H. F. ALEXANDER, Esq.

Sir,—This may certify that I have been engaged in the manufacture of railway cars since 1834, and have built for the different railroad companies cars of all descriptions to the amount of three millions of dollars, and have used on the above cars all kinds of journal boxes, and find that none give better satisfaction than the "Lightner patent box," both on account of the saving of oil and the arrangement for taking out and re-placing the composition by means of the sliding key, and other conveniences which no other box possesses.

Yours respectfully,

CHARLES DAVENPORT.

Worcester, March 17th, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—This is to certify that I have been for some years past engaged in building cars, and that I have tried most, if not all of the patent boxes, and have found Lightner's patent superior to all others as far as the saving of oil is concerned, also the ease with which they are fitted and exchanged in case they get out of order.

For the last three years, I have put them under all of the cars I have built, and in every instance they have given the most entire satisfaction.

Yours truly,

OSGOOD BRADLEY.

Office Union Works, So. Boston, }
May 23d, 1851. }

This certifies that I have applied Mr. J. Lightner's patent axle boxes to my locomotives and tenders for the past two years. I consider them superior to all others,—economical in their use, and possessing many important advantages not found in any other boxes.

SETH WILMARTH.

Office 15, R. R. Exchange, Boston, }
June 1, 1851. }

This is to certify, that we have known the success of Lightner's patent journal boxes upon various roads in New England the past three years, and have been led to examine their peculiar construction.—We are well satisfied of their merits, and have adopted them upon our small gravel cars, and take pleasure, as we ever have done, in recommending their use upon all roads where we are employed in the construction.

GILMORE & CARPENTER,
Contractors.

Amoskeag Manufacturing Co. Machine Shop, }
Manchester, May 31, 1851. }

H. F. ALEXANDER, Esq.

Dear Sir,—We are using the Lightner box on all the engines and tenders we build, and we are satisfied that it is the best box in use, and recommend the same to all those who purchase engines at our works.

Yours respectfully,

O. W. BAYLEY, Agt.

This is to certify that the Fitchburg railroad company having become satisfied of the superiority of J. Lightner's patent Axle Boxes for Railway Cars and Locomotive Tenders adopted the same

and are bringing them into general use upon their road.

One year's experience with the above improvement, has fully convinced me that there has never been anything offered to the public for that purpose which possess such intrinsic value; in fact, this is an improvement which seems to overcome all the difficulties found in all the various kinds now in use. It possesses very many advantages over all others: Some of which are [first] the first cost is much less than that of most boxes in use. [Secondly] 75 per cent is saved in oil; one gill applied to each Journal once a month, or one quart to an eight wheel car, is all these boxes require per month [Thirdly] no dust can gain access to the Journal, which is constantly lubricated with clean oil; hence the saving in repairs of Journals and composition bearings, is a matter of importance. [Fourthly,] its construction is truly simple—not complicated, having nothing liable to become loose by constant and severe service. [Fifthly] for convenience there is nothing which approaches this improvement.—The composition bearings may be removed from the Journals of an eight wheel car, by one man, and returned, or duplicates, in twenty minutes, while under the car: the same would require two men, at least half a day with other boxes in use.—The trucks and wheels using these boxes, are free from oil and dirt, usually seen upon all railroad cars, at great expense to the corporation.

NATH'L JACKSON.

Supt. Car Building and Repairs, F.R.R. Co.

Boston, March 9, 1849.

I hereby certify, that I have examined a box for Car Journals, invented by Mr. Lightner of Roxbury, Mass., and I have thought so well of it that I have adopted it on our railroad, I have known of its success on other roads.

S. M. FELTON,

Supt. F. R. R.

Office of the Central R. R., N. J., }
Elizabethtown, May 1849. }

H. F. ALEXANDER, ESQ.,

Dear Sir:—Your favor, [wishing to be informed how we liked Lightner's patent axle boxes for R.R. Journals,] has been duly received; in answer we would say, we have used the boxes on Locomotive tenders one year, more or less, and on our cars some six months. I consider them the best boxes in every respect, I have ever used, or even seen used on any other roads—for safety, durability and the economy pertaining to all the details connected with the boxes and Journals of R. R. Car wheels; and we shall adopt them upon this road.

Yours Respectfully,

JOHN O. STEARNS.

Supt. Central Railroad Co., N. J.

Manchester, N. H., Nov. }
1st, 1850. }

H. F. Alexander, Sir,

I have used "Lightner's Boxes" under all the Cars of the Manchester and Lawrence railroad, and feel no hesitation in saying that I think them to be the best boxes now in use.

Yours, &c.,

THEODORE ATKINSON, Agent.

Cheshire R. R. Office, Keene, }
March 5th, 1851. }

Mr. H. F. Alexander,

Sir,—Lightner's Patent Boxes have been used on the Cheshire R. R. about a year, and have given the highest degree of satisfaction.

All the Passenger Cars now in use, and a considerable number of Merchandise Cars are furnished with them, and they will take the place of the Common Boxes on all the cars as fast as circumstances will permit.

Very Resp't.

L. TILTON,

Supt. Cheshire R. R.

Boston and Worcester Railroad, }
Boston, April 1st, 1851. }

H. F. Alexander, Esq.,

Dear Sir,—Lightner's Patent oil saving box for railroad cars, has been adopted by this corporation; we are taking out the common and substituting the

Lightner's at the rate of fifty boxes per month; it will soon take the place of all others, as it is decidedly preferable to any heretofore used by this corporation.

G. TWITCHELL, Supt.

Statement of amount of oil used on 32 8-wheel freight cars, on the Boston and Providence Railroad (with Lightner's Boxes) from March 10, 1849, to February 27, 1851, and upon 12 8-wheeled passenger cars from September 8, 1849, to February 27, 1851.

FREIGHT CARS.

Amount Oil.	No. months.	Amount Oil.	No. months.
1.—21 pts.	10	17.—23½ pts.	14
2.—19 "	6	18.—23½ "	11
3.—25 "	13	19.—36 "	21
4.—18 "	7	20.—22 "	10
5.—22 "	12	21.—38½ "	24
6.—24 "	13	22.—29 "	23
7.—20 "	11	23.—35½ "	23
8.—21 "	11	24.—37½ "	23
9.—23½ "	10	25.—51 "	23
10.—21 "	9	26.—31½ "	24
11.—20 "	9	27.—28½ "	23
12.—21½ "	11	28.—36 "	23
13.—19 "	8	29.—50½ "	24
14.—25½ "	17	30.—50 "	23
15.—20½ "	10	31.—41 "	23
16.—31 "	18	32.—39½ "	23

Total, 925½ pts. 510

PASSENGER CARS.

1.—19½ pts.	18	7.—30 pts.	18
2.—25½ "	18	8.—25½ "	18
3.—33½ "	16	9.—29 "	18
4.—19 "	15	10.—46½ "	17
5.—15 "	15	11.—9 "	9
6.—22 "	18	12.—65½ "	17

Total, 340 pts. 197

Averaging 1 4-5 pints of oil for freight, and 1 7-10 for passenger cars per month only!

All orders and enquiries promptly attended to.

BRIDGES & BROTHER,

No. 64 Courtlandt st., New York.

July 25, 1851.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer,
Philadelphia, Pa.

JUST published, accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidity, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

June 28, 1851.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff St.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WIGHTMAN, manufacturing Chemists, Philadelphia.
Jan. 20, 1849.

To Chief Engineers, Directors of Railroads, Canals, etc.

A Civil Engineer and Surveyor, who has been professionally engaged under the British Government, East India Company, etc., is desirous of obtaining employment as an Assistant. No objection to the South or West. Address for one month to C. E. & S., American Railroad Journal office.

August 16, 1851.

To Engineers.

A NEW WORK on the Marine Boilers of the United States, prepared from authentic drawings, and illustrated by 70 engravings, among which are those of the fastest and best steamers in the country, has just been published by B. H. Bartol, Engineer, and is for sale at the store of

D. APPLETON & CO.,

Broadway

September 1, 1851.

Pneumatic process for making Foundations for Bridges, Piers, etc.

THE Attention of Engineers, Contractors, and Bridge Builders, etc., is directed to this method of forming secure foundations. Hollow Cylindrical piles from 8 inches to 10 feet in diameter may be sunk through sand, mud, clay, etc., to any required depth, and filled with concrete or masonry.

The efficacy and economy of the process has been demonstrated in the construction of numerous permanent works, at a much less cost than the use of any other method. (See evidence in Parliamentary enquiry, Railroad Journal, April 19, 1851.)

Contracts made, or licenses granted for the use of the invention in any part of the United States, by

CHARLES PONTEZ,

34 Liberty street, N. Y.

LOWMOOR IRON.

THE LOWMOOR IRON COMPANY having appointed Wm. BAILEY LANG their sole agent in America and Canada, he is now prepared to receive and execute all orders for Railway Tire Bars, bent, welded, and blocked Railway Tires, Axles, Piston Rods, and Boiler Plates. Also, plain, angle, rivet and every other description of Lowmoor Iron.

All communications respecting the above are requested to be sent to Wm. Bailey Lang, at his Steel Warehouse, No. 9 Liberty Square, Boston, or to the Lowmoor Iron Works, Bradford, Yorkshire, England.

30th Sept., 1851.

RAILROAD SPRINGS.

Fuller's Patent India-rubber Springs.

PRICE reduced to 50 cents per pound. The owners of this Patent now manufacture the Springs in their own Factory, and guarantee that each spring shall perform its required duty.

Purchasers guaranteed against adverse claims. They may have full confidence in the working qualities of the springs.

The suits brought against Ray & Co., will soon be brought to issue, and we await the result with satisfaction, having full confidence in the pure administration of the Laws.

The long advertisements put forth by Ray & Co. about prior invention of the spring are worthless; he has not proved prior invention, and cannot sustain his patent in a Court of Law.

For the owners of Fuller's Patent,

G. M. KNEVITT,

23 Courtlandt st., New York.

October 7, 1851.

Railroad Iron.

THE undersigned, Agents for British Manufacturers, continue to sell Railroad Iron of the best quality, and of any weight or pattern required deliverable at any part of the United States or Canada.

They have now on hand, ready for delivery a New York:

2,000 tons of an approved pattern, weighing about 60 lbs. to the yard.

WM. F. WELD & CO.,

42 Central Wharf, Boston.

Practical and Scientific Books

PUBLISHED BY
HENRY CAREY BAIRD,

SUCCESSOR TO E. L. CAREY, PHILADELPHIA.
For sale by Dewitt & Davenport, Tribune Buildings, New York, and Booksellers generally throughout the United States and Canada.

Now being published in Twelve Parts, price 25 cents each, the **PRACTICAL MODEL CALCULATOR**, for the Engineer, Machinist, Manufacturer of Engine work, Naval Architect, Miner and Millwright.—By Oliver Byrne, Compiler and Editor of the Dictionary of Machines, Mechanics, Engine Work and Engineering, and Author of various Mathematical and Mechanical works—illustrated by numerous Engravings; forming, when completed, one large volume, octavo, of nearly 600 pages.

It will contain such calculations as are met with and required in the Mechanical Arts, and establish models or standards to guide practical men. The tables that are introduced, many of which are new, will greatly economize labor, and render the everyday calculations of the practical man comprehensive and easy. From every single calculation given in this work other calculations are readily modeled, so that each may be considered the head of a numerous family of practical results.

The examples selected will be found appropriate, and in all cases taken from the actual practice of the present time. Every rule has been tested by the unerring results of mathematical research, and confirmed by experiment, when such was necessary.

The Practical Model Calculator, will be found to fill a vacancy in the library of the practical working man long considered a requirement. It will be found to excel all other works of a similar nature, from the great extent of its range, the exemplary nature of its well selected examples, and from the easy, simple and systematic manner in which the model calculations are established.

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American Miller and Millwright's Assistant, By W. C. Hughes. 12mo., illustrated...	\$1 00
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THE Fourth Annual Exhibition of AMERICAN MANUFACTURES, by the **MARYLAND INSTITUTE** for the **Promotion of the Mechanic Arts**, will be opened in Baltimore on the 20th October, 1851.

The Exhibition will be held in the **SPLENDID NEW HALL** of the Institute, (fronting on Baltimore street) now being rapidly completed. Their edifice is centrally situated, chaste in its architecture, solid in its construction, and is by far the largest and most complete building in the United States, devoted to the Mechanic Arts. It may be added that this building is 355 feet long by 60 in breadth, with an average height of 68 feet, containing some twelve apartments, the largest of which is 255 feet by 60, and that the cost will be over \$70,000.

To this Exhibition, the Managers ask the attention of all engaged in industrial pursuits throughout the country, and cordially invite them to contribute specimens of their best productions for public inspection, and to compete for the prizes offered by the Institute. These prizes consist of **GOLD and SILVER MEDALS, DIPLOMAS, etc.**, which were last year distributed as follows:—*Gold Medals, 16; Silver ditto, 90; Diplomas, 60;* besides 85 articles of Jewelry, etc., to ladies. *Fair play will be scrupulously observed towards all*, and every facility of Steam power, shafting, fixture, labor, &c., &c., will be amply provided free of expense. The machinery will be under a special superintendent, and a fine display of it is looked for. The last exhibition of the Institute was visited by more than 40,000 persons, and with their vastly improved accommodations and alterations, this number will be doubled at the coming display, embracing many Virginians, Pennsylvanians, and other strangers from the South and West.

Joshua Vansant, President.

Ed. Needles, } Vice Presidents.
F. A. Fisher, }

Samuel Sands, Rec. Sec'y.

Wm. Prescott Smith, Cor. Sec.

F. J. Clare, Treasurer.

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(The last nine in *Italics* are the Committee on Exhibition.)

The Hall will be opened for the reception of goods on **MONDAY, 13th October**; on the next Monday, 20th, at 7 P. M., the Exhibition will be formally opened to the public, and will positively close on **Wednesday, 19th November**. Articles for competition must be in the Hall by **Thursday night, Oct. 16, unless delayed in shipment after starting in ample time.**

Those who intend depositing, will give the Committee or the Agent, notice as early as possible, stating the nature of the goods, and probable amount of room required, to exhibit them to advantage.

Circulars, containing a view of the new Hall and the full regulations of the Committee, with special information, if required, may be had promptly, by addressing the undersigned, or the Institute's Agent, J. S. Selby, Baltimore, post-paid.

ADAM DENMEAD,
Chairman Com. on Exhibition for 1851.

SUPERIOR BLACK WRITING & COPYING INK.

Jones' Empire Ink.

87 Nassau st., Sun Building, New York city.

Net prices to the trade—

Quarts, per dozen, \$1 50	6 oz. per dozen, \$0 50
Pints, " 1 00	4 " " 0 37
8 ounces, " 0 62	2 " " 0 25

On draught per Gallon, 20 cents.
This is the best Ink manufactured, it flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by
THEODORE LENT.

To Railroad Companies, etc.



The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

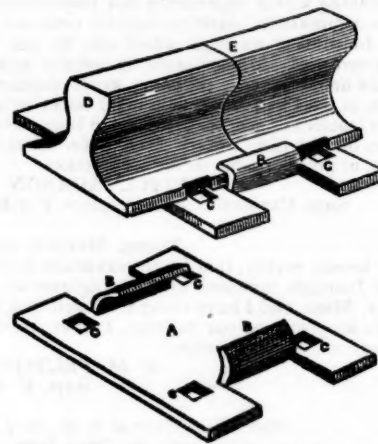
I also invite attention to an improved **PATENT SPRING LOCK**, for **SLIDING Doors to Freight and Baggage Cars**, now in use upon the Pennsylvania Central, Greenville and Columbia, S. C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,
46 South 8th St. Philadelphia.

May 9, 1851.

The American Railroad Chair Manufacturing Co.



ARE prepared to make **WROUGHT IRON RAIL ROAD CHAIRS**, of various sizes, at short notice.

By use of the **WROUGHT IRON CHAIR**, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of **CAST IRON CHAIRS**.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWBRIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railroad Commission Agency.

THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the **ENAMELED CAR LININGS**, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,
75 Kilby st., Boston.

June 20, 1851.